Adventures in the Sea & Sky

World History in a Year: Sailing, Flight & Space Travel

History & Science

Interactive Journaling

Learning Experiences

WinterPromise

Welcome to . . .
WinterPromise

I am thrilled -- and humbled --
you've chosen to share your homeschool journey with us!

Virtual Me, *a significant improvement over the usual Morning Me...*

I am so pleased to meet you in this way,
connecting over our shared love for our families!

I'm Kaeryn Brooks, the author of WinterPromise. I began WinterPromise to meet the needs of my own family, when some of my children struggled and grew disenchanted with learning. They'd lost their joy!

There just had to be a way to bring the joy of learning to every child, no matter how they preferred learning. So the writing began, trying (sometimes succeeding, sometimes not so much), and pulling together the kinds of experiences I wanted my own family to have, developing new ways of appealing to all the ways children learn. After all, I had one child of every flavor! (Or so it seemed!)

That's where WinterPromise comes from -- from my family to yours.

My friends and their friends started asking what I used. My husband came home with a website without telling me (*I'm not the only one who has had that happen, am I?*), and next thing I know, I'm sharing WinterPromise with families that want the same thing I wanted:

interactive, vibrant experiences that created a rich and wonderful family culture.

It's the same thing I want for your family this year:

- An adventure that everyone enjoys together
- Rich learning that introduces your family to new interests
- Shared experiences that create a family culture, inside jokes
- Deep discussions that offer opportunities for critical thinking
- A habit of talks that encourage kids to self-reveal and share
- Discovery of people whose walk with God inspire spiritual growth
- Time for real life, not paperwork or busy work
- A year of family memories

You'll find that I'm here with you on the journey, with remarks and sidebars throughout this guide. I hope this has given you a glimpse inside the heart of WinterPromise. I also hope you feel as though you are a part of our family, now. And your new WinterPromise family is just a phone call away for help or support -- or even prayer.

It is my sincere hope that while you explore different times and places this year, you will also have the chance to show your child the opportunities in the here and now that will last an eternity.

Your Adventure Awaits! *—Kaeryn*

GETTING STARTED WITH YOUR ADVENTURE!

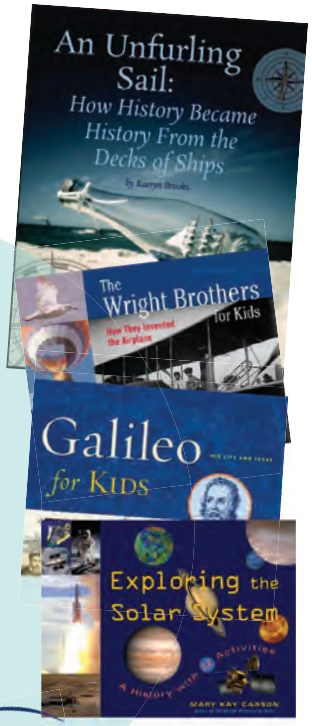
This Guide
Your year-long "what and why" headquarters!

I hope you'll love this program as I do:
It provides answers to how and why the most important civilizations and movements began and came to an end!

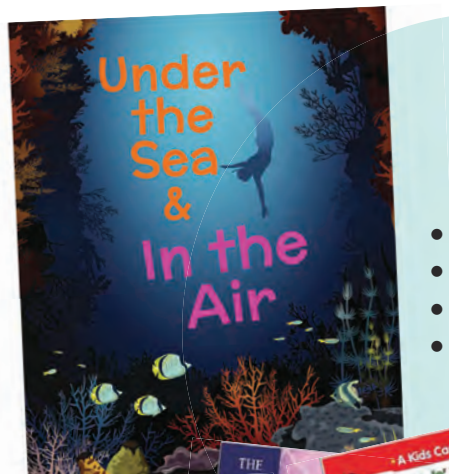
–Kaeryn

History
Read together and discuss how world events unfolded through the develpment of sail, flight, and space travel

- An Unfurling Sail
- Wright Brothers for Kids
- Galileo for Kids
- Exploring the Solar System
- PLUS 3 Bonus Ebooks



Themed Bonus Ebooks



Science
Investigate oceans, weather, and outer space

- Under the Sea & In the Air
- The Ocean Book
- The Weather Book
- Weather Forecasting

All Are Consumable

Journaling
Create intriguing notebooks or timelines that reinforce the learning

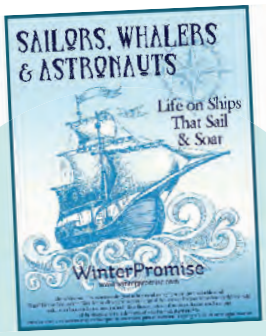
- Make-Your-Own Captain's Log
- Sea & Sky Timeline Figures
- Sea & Sky Timeline Cards

Bonus Ebook Only Resources

- Pirate Page Pack
- Stalking Sea Monsters Journaling
- Younger Learner's Guide
- Older Learner's Guide
- Specialty Timeline Pages

Plus These E-Readers!

- Around the World in 80 Days
- Treasure Island
- 20,000 Leagues Under the Sea
- Kidnapped



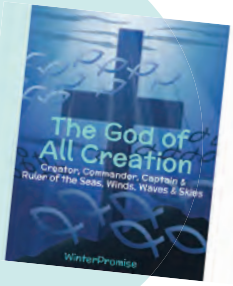
Culture & Activities

Select activities to experience cultural times and places

- Sailors, Whalers & Astronauts

Bible

- The God of All Creation



Consumable

OPTIONAL RESOURCES YOU CAN ADD

Optional Book Journeys We Recommend

These are scheduled in the guide, so you can add them if you'd like.

BOOKS	AUTHOR	ISBN
Dragons of the Deep	C. Wieland	978-0890514245
Seabird	H.C. Holling	978-0395266816
Book of Flight	J. Rinard	978-1554072927
The Stars	H.A. Rey	978-0544763449

Great Options If You'd Like to Add Fictional Adventure

BOOK TITLE:	ISBN#
Treasure Island	978-0451530974
Raiders from the Sea	978-0802431127
Stowaway	978-0689839894
Carry On, Mr. Bowditch	978-0618250745
The Mysterious Benedict Society	978-0316003957
Attack of the Turtle	978-0802853387
Shipwreck at the Bottom . . .	978-0375810497
Flying to the Moon	978-0374423568

Fictional Adventures are Scheduled on Page 19.

USING YOUR GUIDE

This is Your Guide to Adventure!

YOU CAN CUSTOMIZE WP TO YOUR FAMILY

WP offers many learning experiences, so you can prioritize the ones that support your kids' ways of learning.

YOU WILL DISCOVER THE MULTIPLE INTELLIGENCES

Discover your child's preferred way of learning with information on multiple intelligences in this guide -- then use what you've learned to pick assignments that connect with them as individuals!

THIS GUIDE = HQ

This guide is meant to be your headquarters -- feel free to scribble all over it! Write student initials and grades next to completed items.

Your Program Guide is Here to Come Alongside You As You . . .

PREPARE FOR ADVENTURE!

Discover adventuringresources and plan for this year's experiences!

- Using Your Guide
- Learning Goals & Methods
- How to Get the Most from Your Resources
- Preparing for This Adventure
- Planning Your Activities This Year
- Activity Planning Chart
- Consider Adding Family Experiences
- Video Schedule
- Timeline Dates

ENCOUNTER CHARLOTTE MASON METHODS

Integrate CM methods, grading ideas, narration and more into your adventure.

- Charlotte Mason's Teaching Methods at Work This Year
- How Does Grading Fit with Charlotte Mason-Inspired Work?
- CM & the Multiple Intelligences
- Utilizing the Timeline Resources
- How Can I Integrate Narration?
- Overview of Studies

WORK THROUGH THE HEART OF THE GUIDE

Utilize open & go guide pages, independent study schedules, and resource answer keys.

- Overview of Studies
- 36-Week Guide Schedule
- Independent Study Schedules for Students
- Appendix: Resource Answer Key

SEA & SKY
LEARNING GOALS & METHODS

Sea & Sky Learning Goals:

We've provided oodles of fantastic resources to help your family achieve these learning goals. –Kaeryn

Goals for Historical Study

- To learn about the history of transportation by sea, air, and space
- To identify key historical events pivotal to world history that were influenced by advancements or differences in the design of ships, airplanes, or spaceships
- To learn how technology advanced sail throughout history, and air and space travel in the last century
- To discover people who innovated ship or plane designs and inventions related to transporation
- To grow in understanding of how and why people developed new ideas in travel that changed the world, bringing people together or spreading culture across the globe
- To discover what life at sea is like, and how astronauts survive in space

Goals for Science Study

- To learn about the ocean, the weather, and outer space
- To be able to define the natural phenomena associated with the ocean, atmosphere, and space
- To understand how each of these areas function, including the role of air to our lives
- To be able to name the world's oceans, weather patterns, planets and other objects in outer space
- To understand the forces that influence flight, and how man mastered these forces to fly
- To discover how to navigate using a variety of methods
- To identify the location of well-known constellations in the night sky

WinterPromise Learning Methods:

Students can expect to encounter these thirteen learning methods, inspired by Charlotte Mason!

LEARNING METHOD KEY

Read books to learn material about people, history, culture, or past events
Look carefully at illustrations, photographs, charts, or video to draw conclusions about a time/place
Listen to the experiences and daily life challenges of others in fictional and nonfictional books
Discuss the implications of what you've read, and/or what you see, in the lives of people or groups
Determine how the given culture compares or contrasts to your own experiences
Peruse maps to locate countries or states, natural features and landforms, and manmade landmarks
Examine pieces of art to discover detail, learn about an artist and his methods, and take joy in art
Practice your knowledge of key concepts by utilizing resources such as timeline cards
Experience what you've learned by trying it yourself through active learning opportunities
Reinforce what you know by drawing, answering questions, and filling out interactive pages
Show what you know by answering questions or participating in oral review, quizzes or tests
Complete workbook-style pages to reinforce rote knowledge of a subject area or skill
Narrate about what you've read to demonstrate your knowledge and understanding

HOW TO GET THE MOST FROM YOUR RESOURCES

Ideas abound for how to use your adventure resources to learn together, discuss together, discover together.

This all seems rather serious! --- :)
But with WinterPromise, everything should be premised on **JOY!**
Joy of discovery,
Joy of togetherness.
–Kaeryn

HISTORY RESOURCES

LEARNING METHOD ***Read, Look, Listen, Discuss, Determine***
LEARNING GOAL Understand the relevance of historical events

THE "HOW"

- Cuddle together on the couch (optional!)
- Involve kids in a discussion about the events and issues
- Ask them to consider the choices and priorities of nations, groups, or individuals
- Take time to talk about the beliefs or cultural lives of people you encounter
- Consider together how the culture or beliefs agree or disagree with your own and why
- Ask open-ended questions so your students consider issues and form reasonable conclusions
- Use this time to improve your student's thinking skills

SCIENCE RESOURCES

LEARNING METHOD ***Read, Look, Listen, Discuss, Determine***
LEARNING GOAL Discover scientific topics and see them at work

THE "HOW"

- Get kids thinking about the science topics introduced
- Try as many experiments as you can, based upon your schedule and supplies
- Work through the scientific method in your discussion: ask questions, research, hypothesize, experiment, analyze data, accept or reject (and then return to hypothesize and repeat)
- Ask them to follow the scientific methods and predict outcomes
- Consider how topics are impacted by intelligent design and/or the theory of evolution
- Ask open-ended questions so your students consider issues and form reasonable conclusions
- Use this time to improve your student's thinking skills

JOURNALING

LEARNING METHOD ***Reinforce, Show***
LEARNING GOAL Demonstrate understanding of learned material

THE "HOW"

- Consider journaling a written form of narration
- Prompt students to show what they have learned and use critical thinking in their work
- Encourage students to journal in a way that connects with their intelligences
- Prioritize a sense of joy and wonder in how and what kids journal
- Include journaling as part of a student's writing grade
- Praise diligence, carefulness, detailed thinking, and efforts with written work

CULTURAL RESOURCES

LEARNING METHOD ***Read, Look, Listen, Discuss, Determine, Experience, Reinforce***
LEARNING GOAL Discover and evaluate cultural traditions, beliefs, and values

THE "HOW"

- Look for the cultural aspect of places far away or in periods of history
- Involve kids in evaluating why cultural practices were prized in a particular cultural setting
- Ask them to consider the values or priorities of people groups or political bodies
- Compare and contrast cultures you encounter with those that are more familiar
- Consider together how the culture or beliefs agree or disagree with your own and why
- Ask open-ended questions so your students consider issues and form reasonable conclusions

EXPERIENTIAL LEARNING

LEARNING METHOD ***Experience, Reinforce***
LEARNING GOAL Encounter cultural or try-it experiences with active learning

THE "HOW"

- Encourage students to be open to trying new experiences, art projects, or experiments
- Emphasize a focus on learning by doing, practicing and experiencing, not on first-time success
- Intrigue students with experiences that strongly connect to their way of learning
- Support students by helping them think through the steps from start to finish before they begin
- Share what you learned, were surprised by, enjoyed or found challenging and why

GEOGRAPHY & MAPPING

LEARNING METHOD ***Peruse, Practice, Reinforce, Show, Complete***
LEARNING GOAL Become familiar with locations of key events and civilizations

THE "HOW"

- Facilitate students creating or adding to a map with the help of a historical atlas
- Maps can show progress or change with colors, lines, or icons
- Dig into the reasons geography affected nations in the past as compared to modern times
- Compare historical locations to current settlements or boundary lines

BIBLE STUDY

LEARNING METHOD ***Read, Listen, Reinforce***
LEARNING GOAL To learn about God's story and our response to the gospel

THE "HOW"

- Involve students in reading, sharing, meditating, leading discussions, and studying their Bibles
- Teach students how to use Bible study tools (dictionaries, concordance, etc.) as needed
- Share whether each passage is law, history, wisdom, prophecy, gospel, epistle, or apocalyptic
- Create a habit of evaluating their own character and priorities as they encounter new passages
- Allow students to write in their personal Bible or use artistic expression to reinforce key verses

PREPARING FOR THIS ADVENTURE

If I were sitting beside you with a hot cup of coffee at hand, I would spend a few minutes chatting with you about how this is your study, and you are the best one to decide what and how much best serves your family.

–Kaerlyn

☐ DISCOVER YOUR CHILD'S WAYS OF LEARNING

WHY? You'll learn how they process information to prioritize learning experiences tailored to each one!
TO DO: Read "Charlotte Mason & the Multiple Intelligences" in the Appendix in this guide.

☐ COMPLETE COPY OR PRINTING WORK

WHY? Some of your ebooks need to be printed and perhaps hole-punched or bound.
TO DO: Read the printing instructions on the covers and the helpful tips here!

PRINTING TIPS

- Guides can be used as a viewable file on a tablet or laptop if you don't need to use it to record-keep
- Independent Study Schedules in your guides can be printed for all students old enough to use them
- Consider which resources don't need to be printed but could be cast up onto a TV or a laptop or tablet
- Activity Planning Charts are nice to print and use as a list when you shop for supplies
- Timeline Cards should be printed on cardstock and then cut on the lines to size
- Print a copy of consumable resources for each student that will use it, including journaling resources

☐ FAMILIARIZE YOURSELF WITH OUR "OPEN & GO" OPPORTUNITIES

WHY? Some of the best experiences you'll have this year will not require any preparation!
TO DO: Flip through your guide to find activities marked as "OPN" (for "Open & Go"), and use these tips!

EASY ACTIVITY TIPS

- Your journaling resource is always an open & go experience you don't want to miss!
- Most activity books focus on open & go activities or those that are easy or require light preparation
- Any website suggestions are open & go opportunities
- History or science DVDs -- if you plan ahead to get them from your local library -- are instant wins!
- Timeline Cards should be printed on cardstock and then cut on the lines to size
- Print a copy of consumable resources for each student that will use it, including journaling resources

☐ DECIDE WHICH ACTIVITIES TO COMPLETE

WHY? Deciding in advance allows you to get your supplies all at one time -- and voila! -- it's easy to include!
TO DO: Use the "Activity Planning Chart" in this guide.

One of the best things about understanding my kids' preferred way of learning is being able to tailor assignments to meet their intelligence needs.

When my kids' enthusiasm wanes, I encourage my visual-spatial daughter to sketch answers, my hands-on son to choose an activity instead, and my auditory son to simply share his own viewpoint orally.

They learn to work through obstacles, and I feel great as a parent, knowing that they feel empowered and competent, and most importantly -- valued for who they are. *–Kaerlyn*

PLANNING YOUR ACTIVITIES THIS YEAR

Start by making sure you have the basic supplies you are likely to need this year, then select specific activities that interest you from the chart on the next page.

Basic Supplies List

Below is a list of the basic supplies you are likely to need from around home this year.

Basic Supplies Needed in Your Craft Cupboard

Crayons	Pipe Cleaners	Tissue paper	Empty egg carton - 1
Colored pencils	Yarn in black		Empty coffee can - 1
Regular pencils			Empty cereal boxes - 2
Markers	Transparent tape	White paper plates	
Chalk	White glue	Brown paper lunch bags	Pieces of light cardboard or cardstock
Permanent black marker	White craft glue	Brown grocery bags	
Pens	Glue sticks	Plastic grocery bags	Posterboard - several
	Glitter glue	Popsicle (craft) sticks	
Paints in basic colors			
Paintbrushes		Empty paper towel (2) and toilet tissue tubes (2)	
Sponges	Construction paper		
Balloons - 10 or more	White unlined paper	Empty ketchup bottle - 1	

Normal Household Supplies You May Need This Year

Knife, fork, spoon	Milk	Rubber bands	Watch
Mixing spoon	Vegetable oil, cornstarch	Push pins	Pennies (20 or more)
Plastic spoons, bowl, plate	Crisco, margarine, butter	Paper fasteners	Nickel, Dime, Quarter (1ea)
Drinking glass	Small bowl	Stapler	Metal washers (3)
Paper towel	Small baking dish	Index cards (3 x 5)	Tape measurer
White paper plates	9x9 pan	Protractor	Measuring Tape
Plastic gal. zip-locking bags	Cooking pan	Calculator	Yardstick
Plastic wrap	Hot pads, small towel	Drawing compass	A stone or rock
Aluminum foil	Glass measuring cup	Old magazines	Cotton balls
Measuring cups	Spatula	Old Newspaper	Duct Tape
Funnel			Masking Tape
Food coloring	Scissors	Rope - 12 feet+	Clear Adhesive Tape
Drinking straws	Ruler	String	
Box of Toothpicks	Stapler	Safety pins	
Flour, sugar, salt, cornmeal	Hole Punch	Flashlight	

Unusual Supplies You'll Be Using Occasionally Include:

2 large wide-mouthed jars and an empty large plastic peanut butter-type jar, and a clear milk jug.
Binoculars will be helpful for some assignments, although these are optional.
2 Thermometers are needed for some activities.
Both a directional compass and orienteering compass are needed for some activities.

ACTIVITY PLANNING CHART

- Use this chart as a guide to determine which activities you plan to complete.
- No "game-type" activities, notebooking, or mapping projects are included in this chart.
- Supplies listed for the activities are unusual ones you may not have on hand.
- If no supplies are listed, any supplies needed are on the Basic Supplies List.
- Highlight any activities you plan to complete and use the chart as a shopping list.

Activities That Fit Your Family

We've labeled our activities according to levels of involvement, to make selecting the right ones easy as pie!

SCALE	*LEVEL OF INVOLVEMENT & DIFFICULTY*	*ABBR.*
OPEN & GO!	Involves no prep, but perhaps a supply we provide or you have.	OPN
EASY	Involves little to no prep for the parent and common supplies	EAS
LIGHT PREP (LT. PREP)	Involves slightly more prep but just common household supplies.	LTP
LTD. SUPPLIES	Involves little to no prep, but you need a few common supplies	LTD
MODERATE	Involves moderate prep work or supplies you'll need to gather.	MOD
SKILLED	Project takes skill to complete, but supplies are provided/common.	SKI
PLAN IT	A project that requires time to plan ahead, but otherwise easy.	PLN
DIFFICULT	Project requires quite a bit of time, skill or supplies.	DIF

CHOOSE YOUR ACTIVITIES

Check the left box below of the activities you plan to complete.
Then, use the list to help you shop for any supplies you don't have on hand.

Do It?	*Rating*	*Activity*	*Supplies*
WEEK 1			
	OPN	Be a Lookout	
	EAS	How Much Water?	9x9 baking pan, large drinking glass
	LTP	Ocean Cupcakes	cake mix and required ingredients, plus cupcake baking pan and cupcake liners, with premade white frosting, and blue and green food coloring
	OPN	Sea Lingo Game	

ADVENTURES IN THE SEA & SKY

OVERVIEW OF STUDIES

ADVENTURE ON THE HIGH SEAS

THE CHARACTER OF A SHIP

Week 1: A Ship, Inside and Out

PEOPLE TAKE TO THE SEA

Week 2: Ancient Sailors
Week 3: The Greek Peninsula
Week 4: The Romans Take to the Waves
Week 5: The Vikings Traverse the Atlantic
Week 6: The Middle Ages

THE RENAISSANCE MAKES WAVES

Week 7: A Sailing Renaissance
Week 8: Age of Exploration
Week 9: Ships Help Build New Empires
Week 10: Empires Struggle for Dominance
Week 11: New Technologies Change Navies
Week 12: Piracy on the High Seas

INDUSTRIAL AGE SHIPBUILDING

Week 13: America Enters the World's Seas
Week 14: The British Empire
Week 15: Steam Power & Ironclads
Week 16: Luxury Liners & Disasters

20th CENTURY SHIPS

Week 17: Global Power and the Great War
Week 18: A Second Terrible War to Today

ADVENTURE IN THE SKIES ABOVE

ADVENTURES IN THE AIR

Week 19: Early Aviation Pioneers
Week 20: Wilbur and Orville
Week 21: The Four Forces of Flight
Week 22: The Three Axes of Motion
Week 23: Flight Attempts and Failures
Week 24: Kitty Hawk Triumph
Week 25: Barnstormers & Record-Setters
Week 26: Air Power in World Wars
Week 27: World Travel & Sonic Speed

ADVENTURES IN SPACE

Week 28: Our Place in the Universe
Week 29: One Sun and One Moon
Week 30: Hard Core Planets
Week 31: The Gas Giants
Week 32: The Galaxy's Outer Regions
Week 33: Early Launches and Milestones
Week 34: Moon Landing!
Week 35: Space Shuttles & Catastrophes
Week 36: Rocketing into the Future

SCIENCE TOPICS

OCEANS & SEAS

Weeks 1-4: Oceanography
Weeks 5-9: Ocean Tides, Waves, Currents & Zones
Weeks 10-16: Ocean Biomes & Sea Life
Weeks 17-18: Things That Affect Our Oceans

WEATHER IN THE SKY

Weeks 19-22: Types of Weather
Weeks 23-27: Forecasting Weather

ASTRONOMY

Weeks 28-31: Exploring the Galaxy
Weeks 32-36: Constellations and Observation

ADVENTURES IN THE SEA & SKY

WEEK 1 - A SHIP INSIDE AND OUT

INTRO TO SHIPS - OCEAN DESIGN - SHIPBOARD BASICS

Long, long ago, people figured out how to travel on the water in vehicles that could float. What kinds of boats did ancient men create? For what did they use their boats?

It's time to embark on a journey on which you'll follow the history of the ship. As you travel, you'll see that the history of the ship makes all the difference in the history of the world!

You'll start out by discovering the answers to some questions you may have always had about ships: Why do we call some sea vessels ships and others boats? What are the parts of a sailing ship or a powered vessel? How does a ship move? What were the first types of ships that took to the sea? And -- as you've probably wondered -- what makes a person seasick?

DAY 1

Boats of Ancient Peoples

An Unfurling Sail | Introduction, Pages 7-8
Sailors, Whalers | Sailing Lingo, Pages 8-13
The Ocean Book | Introduction, Pages 6-7
Under the Sea & in the Air | Bodies of Water, Page 4

Activity Options

Sailors, Whalers |
EASY! How Much Water, Page 5

DAY 2

Ships vs. Boats

An Unfurling Sail | Parts of a Sailing Ship, Pages 8-9
Sailors, Whalers | Parts of a Ship, Page 6
The Ocean Book | Oceans & Seas of the World, Pages 8-9

Activity Options

Sailors, Whalers |
OPEN & GO! Be a Lookout, Page 7

DAY 3

Parts of a Ship

An Unfurling Sail | Ship's Motion and Seasickness, Page 10
Under the Sea & in the Air | Our Blue Oceans, Page 6

Activity Options

Other Ideas | See Notes
OPEN & GO! Sea Lingo Game, See Notes

DAY 4

How a Ship Moves

An Unfurling Sail | First Boats, Pages 11-12
The Ocean Book | People Cross the Ocean?, Page 83
Under the Sea & in the Air | How Many Oceans?, Page 4

Activity Options

Under the Sea & in the Air |
LT. PREP - Ocean Cupcakes, Page 5

Other Ideas | See Notes
WEBSITE - How a Boat Sails, See Notes

INDEPENDENT STUDY

COMPLETE THESE DAY 1:

☐ **Bible** | The God of All Creation	Introduction & Isaiah 40: Discipline 1, Lesson
☐ **Journaling** | Captain's Log	Coming Aboard the Seafarer, Page 5
☐ **Math Assignment** | Write In	_____
☐ **Other Assignment** | Write In	_____

COMPLETE THESE DAY 2:

☐ **Bible** | The God of All Creation	Isaiah 40: Discipline 2, Journaling
☐ **Journaling** | Captain's Log	Parts of a Ship, Page 6
☐	Measure Your Seagoing Skills, Page 8
☐ **Math Assignment** | Write In	_____
☐ **Other Assignment** | Write In	_____

COMPLETE THESE DAY 3:

☐ **Bible** | The God of All Creation	Isaiah 40: Discipline 3, Prayer
☐ **Science** | Under the Sea & In the Air	Find That Body, Page 6
☐ **Journaling** | Captain's Log	Your Voyage Aboard the Seafarer, Pages 6-7
☐	Measure Your Seagoing Skills, Page 9
☐ **Math Assignment** | Write In	_____
☐ **Other Assignment** | Write In	_____

COMPLETE THESE DAY 4:

☐ **Journaling** | Captain's Log	Questions, Page 9
☐ **Timeline Work** | Place Figures	Chart Your Travels, Page 10
☐ **Math Assignment** | Write In	Place Timeline Figures Below
☐ **Other Assignment** | Write In	_____
☐	_____

NOTES

TIMELINE FIGURES

The Creation
The Dinosaurs
Noah and the Flood
The Ice Age

How a Sailboat Sails and a Boat Floats
http://www.boatsafe.com/kids/033199kidsques.htm

"How a Boat Floats?" - http://www.boatsafe.com/kids/021598kidsques.htm

Sea Lingo Game
Your student can make up their own memory game. First, have them cut card-size pieces of paper or cardstock. Using the terms and expressions from "Sailors, Whalers & Astronauts" and the "Make-Your-Own Captain's Log," have them put the term or expression on one piece of paper and the meaning on another. When they have gathered quite a few sets of two, they can lay out a "memory game" on the table. Shuffle the cards, then lay all the cards face down on the table in rows. The first player tries to make a match. If they don't, the cards need to be turned back over upside down. Players should try to remember the locations of the cards they've seen. Players keep any matches they make. Continue until all cards are made into matches. The player with the most pairs wins.

ADVENTURES IN THE SEA & SKY

WEEK 2 - ANCIENT SAILORS

BEGINNINGS OF SAIL - EXPLORING OCEANS - ABOARD A SHIP

You've discovered that Captain Kildare is a true gentleman, a man who loves history. Just this morning, he began talking to you about the first people on the sea.

"You see, Crow, it's like this. Though the world's first recorded civilization was in Mesopotamia, navigation by water in the ancient world took off on the Nile River in Egypt. Egyptian life centered around the Nile; Egyptians depended on its waters for irrigation and transportation, its wildlife for hunting, and the papyrus along its banks for paper and basketmaking.

"In addition, the Egyptians used the mighty Nile to assist them in building huge monuments like the pyramids. Building materials, men, and supplies were taken to sites along its banks on ships built for the Nile's waters. The Egyptians mastered the Nile, then moved out into the world beyond.

"As the glory of the Egyptians faded, their neighbors across the Mediterranean developed a strong trading empire. The Phoenicians had several home ports, and came to dominate trade in the Mediterranean, sailing galleys even to Africa. Amazing, huh?"

DAY 1

Egyptians Conquer the Nile

An Unfurling Sail | Egyptians Conquer the Nile, Pgs 13-15
Sailors, Whalers | Coming Aboard, Page 14
The Ocean Book | Fish Prior to the Flood, Pages 86-87
Under the Sea & In the Air | Oceanography, Page 8

Activity Options

Sailors, Whalers |
EASY! Furl a Sail, Page 16

DAY 2

Egyptians Head to the Mediterranean

An Unfurling Sail | Egyptians to Mediterranean, Pgs 15-17
Sailors, Whalers | The Watches, Page 15
The Ocean Book | What Happened to Fish?, Page 88

Activity Options

Other Ideas | See Notes
WEBSITE! Ancient Sailor

DAY 3

Egyptian Rulers Expand Their Power

An Unfurling Sail | Egyptians Expand Power, Pgs 17-19
The Ocean Book | The Catastrophic Flood, Pages 90-91

Activity Options

Other Ideas | See Notes
WEBSITE! Speed at Sea

DAY 4

The Phoenicians: Natural Sailors

An Unfurling Sail | The Phoenicians, Pages 19-22
The Ocean Book | Modern Catastrophic Change, Pgs 92-93

Activity Options

Other Ideas | See Notes
WEBSITE! Sailor on a WWII Ship

INDEPENDENT STUDY

COMPLETE THESE DAY 1:

☐ **Science** | Under the Sea & In the Air	What's at the Bottom?, Page 9
☐ **Journaling** | Captain's Log	Ships in Time: Egyptian Ships, Page 16
☐	Get to Know Sailor Lingo, Page 13
☐ **Math Assignment** | Write In	_____
☐ **Other Assignment** | Write In	_____

COMPLETE THESE DAY 2:

☐ **Bible** | The God of All Creation	Isaiah 40: Discipline 4, Journal
☐ **Journaling** | Captain's Log	Measure Your Seagoing Skills, Page 17
☐	Ranks in the Crew, Page 14
☐ **Math Assignment** | Write In	_____
☐ **Other Assignment** | Write In	_____

COMPLETE THESE DAY 3:

☐ **Bible** | The God of All Creation	Isaiah 40: Discipline 5, Meditation
☐ **Journaling** | Captain's Log	Chart Your Travels, Page 18; Map the World, Page 15
☐ **Timeline Work** | Place Figures	Specialty Timeline Page: Egyptian Pharaohs
☐ **Math Assignment** | Write In	_____
☐ **Other Assignment** | Write In	_____

COMPLETE THESE DAY 4:

☐ **Bible** | The God of All Creation	Isaiah 40: Discipline 6, Share
☐ **Journaling** | Captain's Log	Ships in Time, Page 20
☐	The Phoenicians' Trading Grounds, Page 19
☐ **Timeline Work** | Place Figures	Place Timeline Figures Below
☐ **Math Assignment** | Write In	_____
☐ **Other Assignment** | Write In	_____

NOTES

TIMELINE FIGURES

Menes
Egyptians Invent the Sail
Mycenaean Civilization
Queen Hatshepsut's Trade Org.
Phoenician Civilization

An Ancient Sailor Buried in Time
See pictures of an ancient shipwreck and an ancient sailor buried along with his dog! Go to http://www.newsweek.com/id/67475

Why is Speed at Sea Called Knots?
Learn about the history of the "knot" and how it was determined.
https://www.boatsafe.com/nautical-mile-arrived-speed-called-knots/

Get to Know a Sailor's Daily Life aboard a WWII Battleship
https://visitpearlharbor.org/life-on-the-uss-missouri-battleship/#:~:text=-Daily%20Life,clean%2C%20and%20perform%20routine%20maintenance

DVD Recommendation! History Channel's Modern Marvels series has quite a few entries that would really add to your studies this year. The first of them is "Deep Sea Exploration," which traces the history of submersible machines. Purchase at History Channel Shop - Item #AAE-42212

An Unfurling Sail:

How History Became History From the Decks of Ships

by Kaeryn Brooks

WinterPromise Publishing.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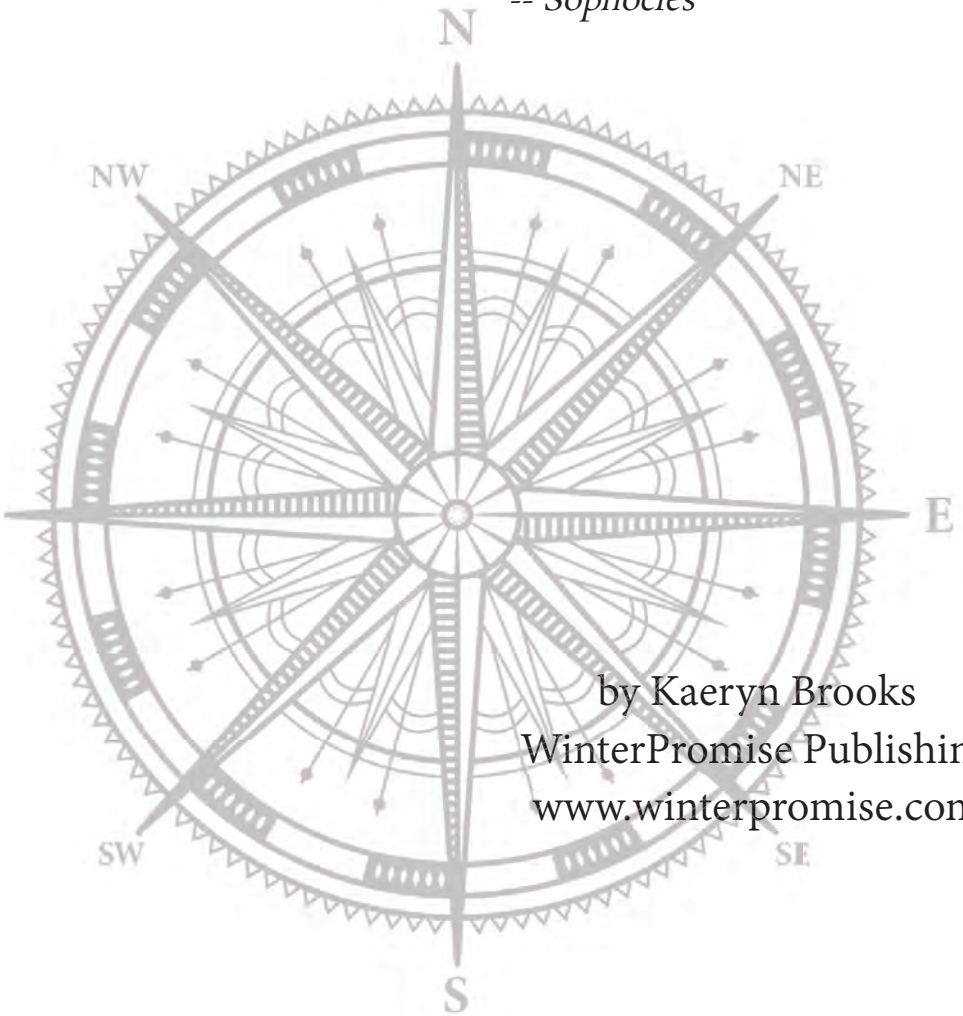
An Unfurling Sail

How History Became History from the Decks of Ships

Wonders are many,
and none is more wonderful than the
power that crosses the white sea,
driven by the stormy wind,
making a path under surges that
threaten to engulf him...

-- *Sophocles*



by Kaeryn Brooks

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An Unfurling Sail

How History Became History from the Decks of Ships

Trace the development of world history as influenced by, and often determined by, ships at sea.

Table of Contents


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Chapter 1
A SHIP, INSIDE & OUT

INTRODUCTION

No one knows which human being first decided to head into the water in a floating object. We can imagine that many humans looked with longing at the rivers or seas near their homes, wanting to explore what was just around the bend in the river or just across the sea. As with any new achievement, there are many people who desire to attempt something before one brave person decides to risk trying -- and succeeds! We'll never know who that first person was, but many early human societies took to the water.

I must go down
to the sea again,
to the lonely sea
and the sky.
And all I ask is
a tall ship
and a star
to steer her by.

-- John Masefield

Most of these societies found that wood pieces shaped and fit together floated very well. The pieces could be cut and formed in many different ways for making boats in varying sizes or designed for different purposes. The success of many ancient civilizations can be traced to the water travel that aided their trade and expansion. These early peoples used boats in many of the same ways they are used today: for fishing, trade, transportation, military operations, and even recreation.

So, in many ways, the history of the ship is the history of man's communities, empires, and greatest achievements. The pages that follow will take you on a journey filled with the sights, sounds, and smells of sea travel as experienced by humans for thousands of years. Get ready for a trip full of adventure!

Let's begin by considering the words we use for seagoing vessels. The words *boat* and *ship* are words you probably learned when you were little more than a baby, but have you ever thought about what makes a boat a *boat* and what makes a ship a *ship*?

It's not really an easy question to answer. Usually we think of boats as being a small craft that can cross rivers or small seas, while ships are larger and are designed to travel on the oceans. Many times this is true, but there are some exceptions. Fishing boats are always called boats, no matter how big they are, and many of these boats are ocean-going. Submarines, also designed for open waters, are always called boats because they started as very small craft.

A good way to divide ships from boats is to think about a ship having decks for crew quarters and storage of goods. Although this is not always true, it definitely is a more reliable help than thinking only of ships -- not boats -- as being in the oceans.

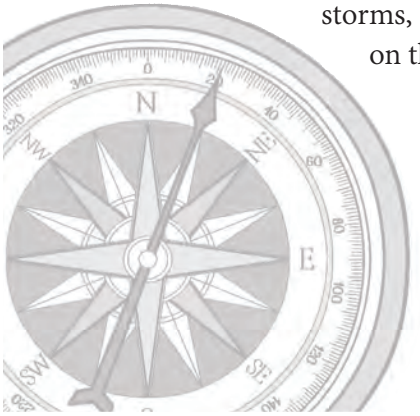
THE PARTS OF A SAILING SHIP AND A POWERED VESSEL

A sailing ship has four main parts: a hull, the mast(s), the spars, and the sails and rigging. The hull of a sailboat is the watertight bottom of the ship. The front of the hull is called the bow, and the rear is the stern.

The sails of a ship are the fabric sails that catch the wind and move the ship. The mainsail is the largest sail on a sailing ship. The mast is a vertical pole that supports the weight of the sails. The spars are the horizontal poles on the masts that support the sails. The rigging refers to the lines (or ropes) that help support the sails, or adjust, raise or lower the sails.

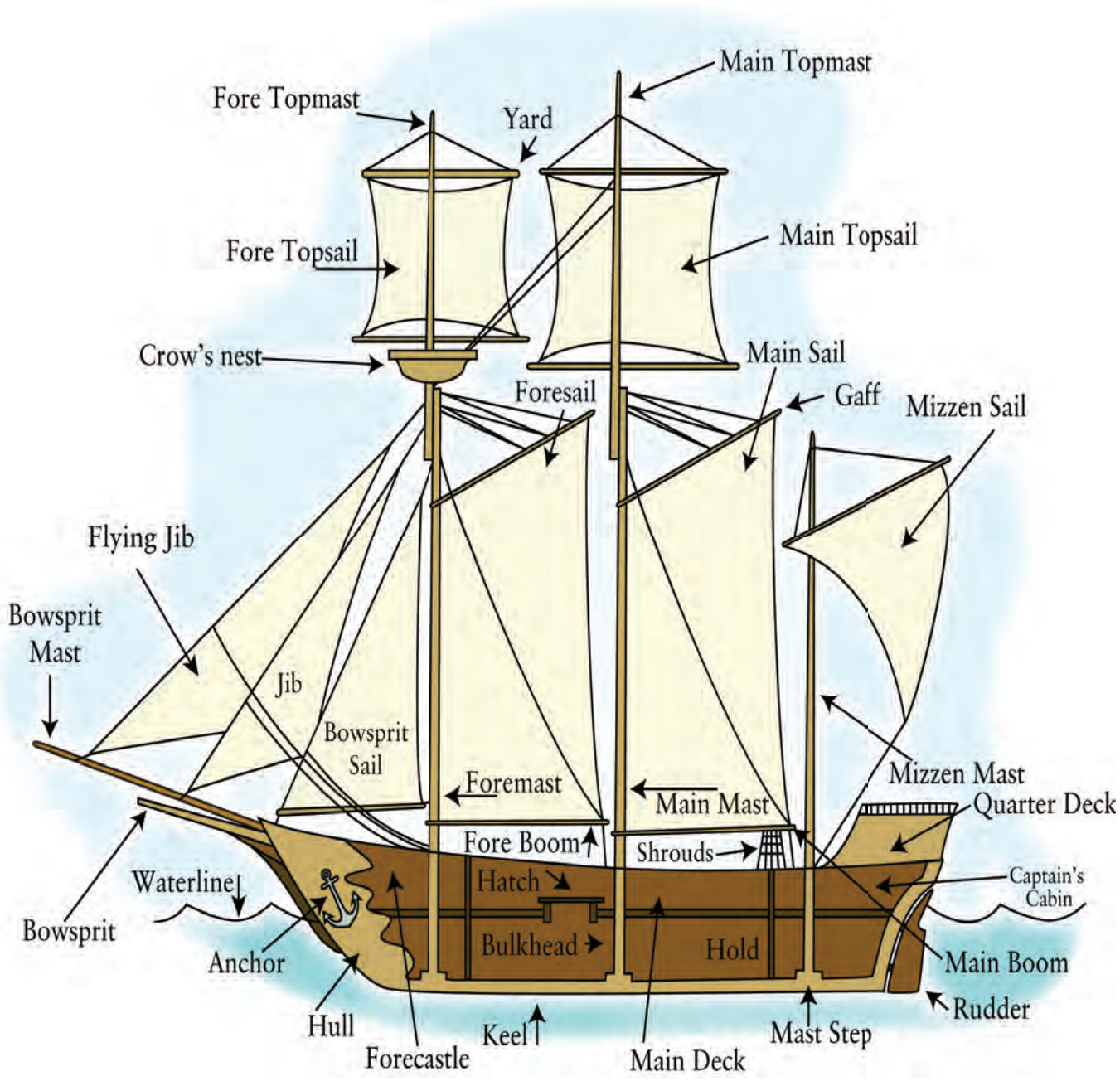
A sailing ship often carries either square sails or lateen sails, which are triangular in shape. Sometimes it carries both types of sails, with the square sails rigged to the masts and lateen sails carried on the foremast. Rigging lines often connect the foremast's lateen (triangular) sails to the bowsprit, a type of spar that extends from the front of a ship. A sailing ship also has a crow's nest from which a lookout can sight land or watch for other ships or hazards, such as icebergs or sandbars. It is a cup-shaped or flat platform that sits high on one or more of the masts.

Sailing a ship requires a lot of skill and experience. You must know how to sail into the wind, across the wind, or with the wind. Movement and speed depend upon adjustment of the sails so that they work with the wind to create good resistance or lift to move the ship forward. Sailors throughout history have had to fight the whims of the weather, sometimes running into powerful storms, and other times finding themselves becalmed. Sailors becalmed on the ocean might wait weeks to be able to sail once again.



A powered ship has four main parts: a hull, the engines, the propeller, and the rudder. The hull is the watertight bottom of a ship. It is usually divided into several levels called decks, and bulkheads are the walls that divide the decks into compartments. These compartments, in a modern ship, can be closed off if they are flooded, to contain the water to one part of a ship. The deck that is at the same level as the top of the hull is the main deck.

PARTS OF A SAILING SHIP



Hulls have a pointed bow so that they can move cleanly through the water. The engine of the ship provides power for movement of the propeller. Gears and other machinery connect the engine to the propeller, and force the propeller to move in a circular motion through the water. The circular motion of the propeller pushes on the water behind the ship, forcing the ship to move forward.

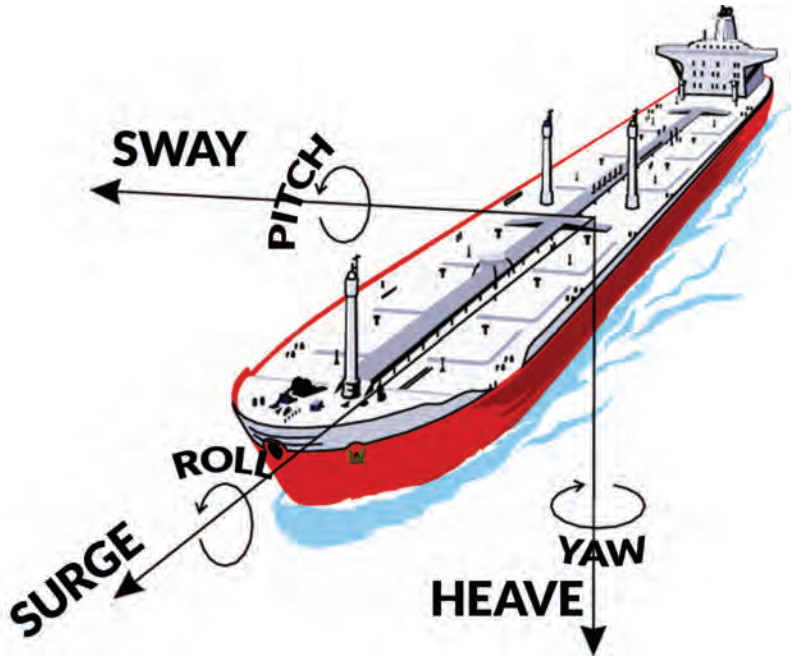
The rudder of a ship controls its direction. A rudder is a flat piece of metal that is hinged to the stern (the back of the hull), so it can be swung to the right or left. The rudder today is connected to a steering wheel on the ship's bridge. In early boats, a rudder was needed to steer a straight course, as a single sail tended to turn vessels either upwind or downwind. The rudder in early boats was connected to a steering oar.

A SHIP'S MOTION AND SEASICKNESS

A ship at sea moves in several different directions -- six, to be exact. You can count on a ship rolling, yawing, pitching, swaying, surging, and heaving. These words themselves might sound like the words you'd use to describe what happens to your stomach when you're not feeling well!

Three of these words: rolling, swaying and yawing, have to do with left and right motions. Swaying is when a ship moves left or right of where it is in the water. Yawing is when the ship turns to the right or left. Rolling is the motion of a ship, tilting first over to the right, and then to the left.

Two of the other words are "up and down" motions. Heaving is when the ships moves up and down in the water, and a boat is pitching when it tilts up and down. You can see the difference between these two motions by putting your hand flat out in front of you. If you move your hand straight up and straight down, that's heaving. Now, if you tilt your fingers up in the air, then down, that's pitching. The last motion is surging, and that is the easiest motion to imagine. That's when a boat moves forward or backward in the water.

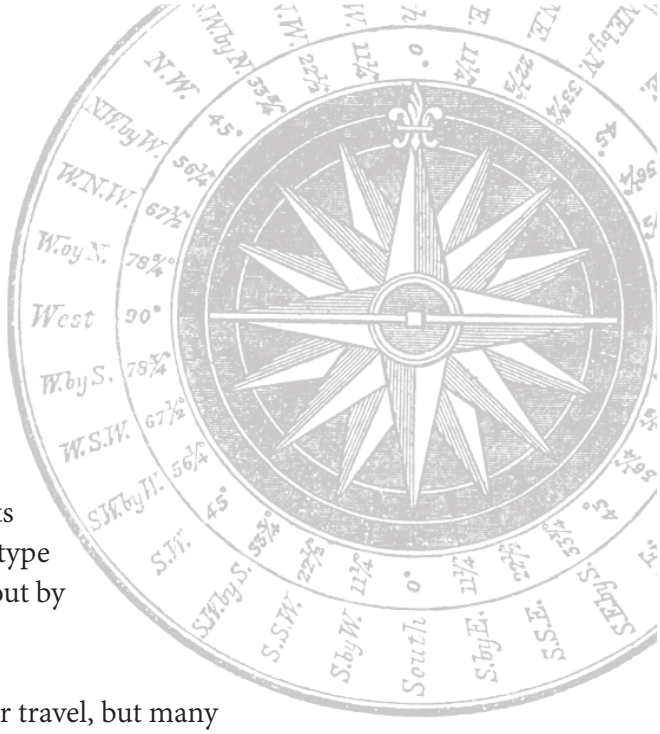


To summarize then, the six motions are:

Heaving: moving up and down
Swaying: moving (straight) to the left and right
Surging: moving forward and backward
Pitching: tilting up and down
Yawing: turning (on a diagonal) left and right
Rolling: tilting from side to side

The rolling action of a ship tipping to the left, then to the right, may seem like it would make you seasick, but it is heaving, going up and down, that causes most passengers aboard ships to become seasick. It's also one of the hardest motions of a ship for designers to eliminate.

FIRST BOATS



If you had never seen a boat before, what ideas would you come up with for traveling on the water? Some of the most ancient water travel was conducted using items originally used for other purposes. Early Egyptian sailors took an idea from their cooking fires and used large pots to navigate through the Nile Delta. Other Mesopotamian peoples used inflated animal bladders! Rafts were a common solution for early peoples, and so were boats with hides stretched over a frame. Small waterproof baskets used for food storage may have inspired basket-type boats, and many people allowed nature to help out by providing a canoe from a tree trunk.

Early peoples came up with many ideas for water travel, but many of these early boats were only useful if you took short trips on relatively calm water. They helped people build relationships with nearby settlements, transport small amounts of goods, and even increase their ability to gather foods with water hunting or fishing. The limitations of these early craft are clear, though. What would an oversized pot do if it were used on open water when a storm blew up? You sure wouldn't want to use an inflated animal bladder in rocky waters! Rafts could easily be swamped with water, and boats formed from trees could only be as big as the trees available.

For many years these types of boats helped small civilizations to thrive and grow, but improvements would be needed to build some of the world's early empires. New types of boats would change life forever along a river in Africa -- the mighty Nile.

The first improvement to the log canoe was to expand the sides by stretching them open gradually. Most log canoes, formed from trees, were long and quite thin. The canoe would be formed by hewing out the insides, or burning them out. The danger of tipping over in these rounded canoes was high.

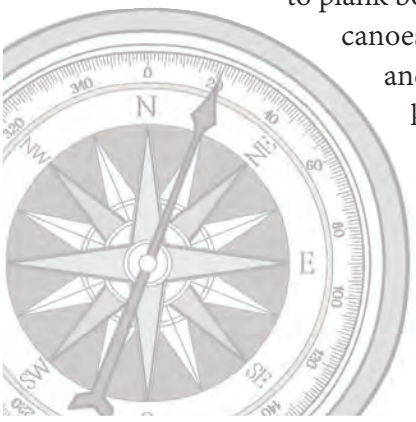
To make them more stable in water, people expanded their sides. This was accomplished by making the sides very thin and pushing out on them with pieces of wood to stretch them farther apart. Longer pieces would be inserted to gradually force the sides away from each other. It was a long, slow process that required a lot of patience. If it were stretched too rapidly, the boat would crack apart and be useless. If it were stretched correctly, the ends of the canoe would gradually pull up, as the sides of the canoe were pulled outward. This made the canoe easier to maneuver in the water.

To see this for yourself, experiment on a plain piece of notebook paper. If you'd like to keep your experiment long-term, use a heavier weight paper. Fold the piece of paper in half the long way, so that you have a long thin rectangle. Open the paper back up and fold each long side inward so that the edge of the paper meets the fold line. Do this on both sides. Now fold the paper along the original fold line again so that the paper is now really long and very thing. At each of the short ends, tape the short sides together.

Now the paper is in a "canoe" shape. Pull the sides apart at the middle. You should see the ends of your "canoe" pulling gently upward. To see it really well, set your "canoe" on a table top, and pull the sides apart again. The ends of the canoe should lift off the table. If you want to keep your canoe in this shape, matchsticks would keep the middle forced outward. If you've used heavier weight paper, you could spray your creation with a shellac if you want to try it in the water. Make sure you have taped both ends very well before spraying it. Using a heavier tape, such as duct tape, will also help. If you get really creative, you could paint the canoe before spraying with shellac. BE SURE, if you spray with shellac, you do it with an adult and spray in a room that is well-ventilated or go outdoors to do it!

Another type of improvement to the dugout was to add another log alongside the first canoe log. It was either paired right alongside the first log, for stability, or it was placed a few feet apart and joined together by other wooden planks stretching across both of them. These boats were an early version of an outrigger canoe, which you may have seen in pictures of islands in the Pacific.

As soon as people began adding additional wood pieces to boats, the path to plank boats had begun! First, wooden planks were added to the sides of canoes to extend them. Gradually, more and more planks were added and the basic log used originally to form the entire boat became the keel, the wooden beam along the bottom of the boat that was the skeleton to which planks were added. Once the idea of a skeleton of wood was paired up with adding planks, the plank boat was born. From this point on, boats could be made in any shape in any size!



Chapter 2
ANCIENT SAILORS

EGYPTIANS CONQUER THE NILE

The world's first recorded civilization was Mesopotamia, a civilization that grew between two rivers -- the Tigris and the Euphrates. These rivers, though, did not help out the development of water navigation. It would not be this civilization that invented the ship. Instead, it was the magnificent Egyptian civilization that had this distinction. It's not really all that surprising since Egyptian life centered around its mighty river -- the Nile. Every year the Nile flooded and brought to the banks a rich dark soil, excellent for growing crops and encouraging settlement along its edges. The river connected this large country, providing a common lifestyle to many Egyptians, and playing a role in the religious beliefs shared by Egypt's peoples.

The sea is the same as it has been since before men ever went on it in boats.

-- Ernest Hemingway

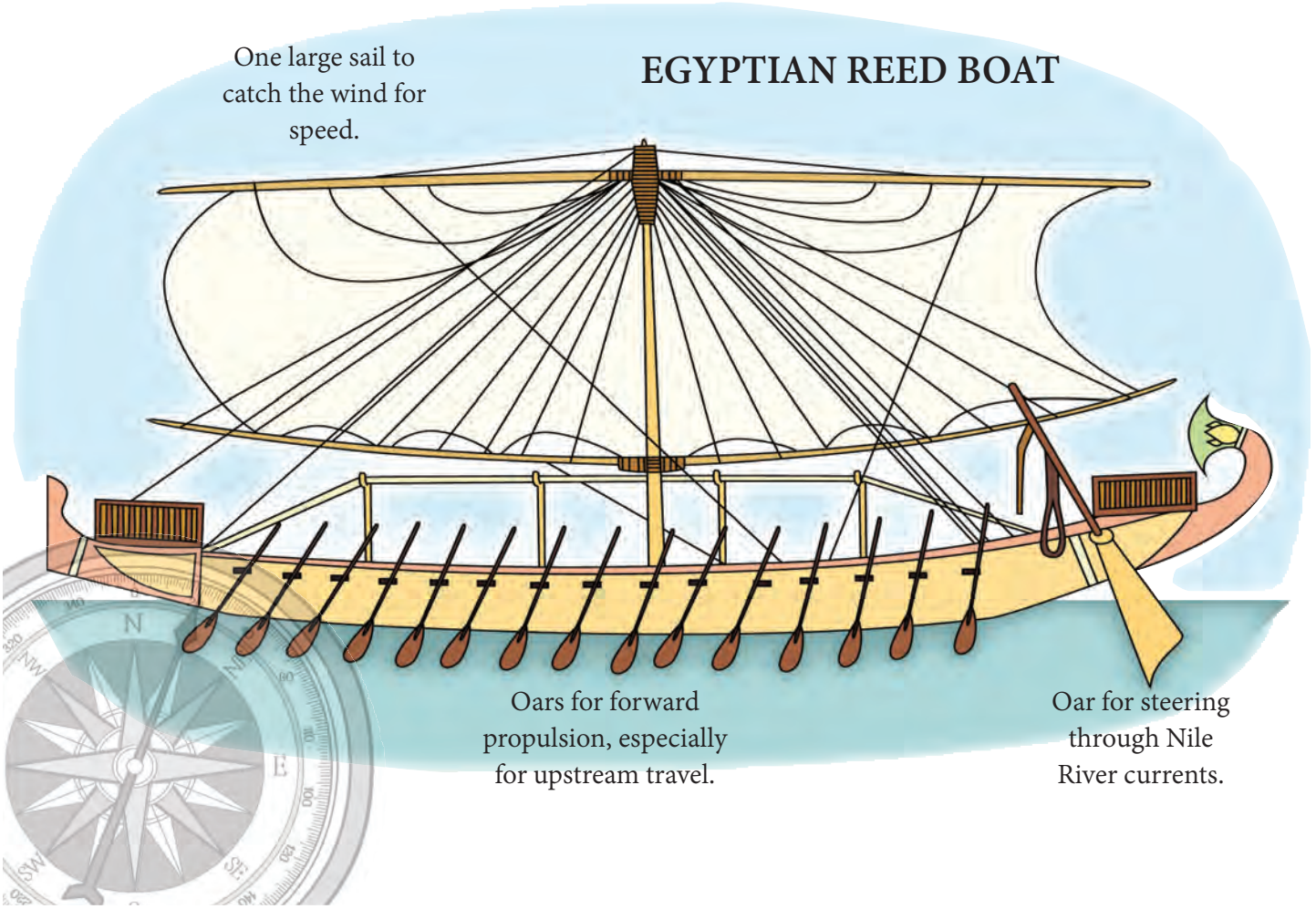
Egyptians had every reason to desire to take to the water. Of primary importance to the Egyptians was the management of their empire. The Egyptians united their country under Menes in around 3100 B.C., and from that point in their country's history, the Nile River was key to keeping central control of outlying provinces and cities.

Communication between cities was a must, and the river provided faster travel time for important news to travel to the empire's capital city, Memphis. Another priority for Egyptians was the transportation of goods throughout the kingdom. Agricultural products, natural resources like papyrus, and other trade goods had to travel up and down the river to supply Egyptian citizens with products they could not produce locally. Transporting these goods by water made a lot more sense than tackling a trip through desert land.

Finally, the Egyptians' religious practices motivated them to conquer water navigation. Their building projects -- pyramids, temples and other ceremonial centers -- demanded tremendous quantities of stone that could not realistically travel by land. These heavy blocks would be quarried elsewhere in Egypt, then floated down the river to a building site.

The Nile's role in Egypt's development as a country cannot be overestimated. Egypt's economy depended upon it for trade, her religious life relied on it to complete worship centers, and the daily life needs of Egypt's citizens were met by its supply of agricultural products and the wildlife it supported. Perhaps it is not surprising then, that the Nile also provided the very materials used to conquer it!

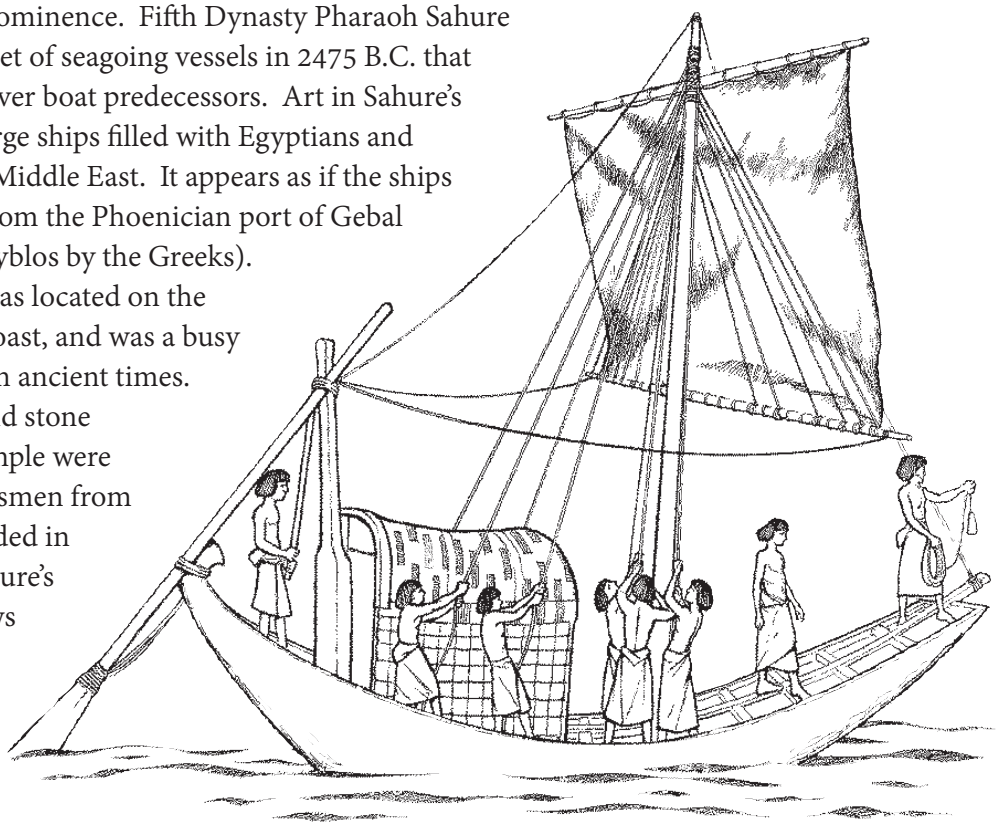
The banks of the Nile grew papyrus reeds, which were used by early Egyptians to make reed boats. The reed boats were paddled with oars by Egyptian oarsmen. Reed boats played a large role in Egyptian navigation for many years and were used for many different purposes. However, the reed boats could not support the weight of stone destined for Egyptian pyramids. Egyptians started adding pieces of timber to the boats, joining them to form ribs and planks. Of course, this created a more urgent need for timber, which was pretty scarce in Egypt's desert land.



Egyptians didn't stop there in their progress on the water. They developed the invention of the sail. At first Egyptian boats floated down the Nile helped by the current, or pushed by the effort of oarsmen. At some point, they may have started trying to catch the power of the wind with palm fronds as they tried to make their way back upstream. By the time of Menes' united kingdom, the true sail had developed on the Nile. With these developments -- the plank boat and the use of a sail -- Egyptians were ready to create sailing crafts that would master the Mediterranean Sea. They were ready to invent the ship!

THE EGYPTIANS HEAD TO THE MEDITERRANEAN

Sometime near 3500 B.C., the Egyptians invented the sail. Their sailing craft developed over time and with them the Egyptians were able to tackle the challenges of sea travel. Several Egyptian rulers were known for their naval prominence. Fifth Dynasty Pharaoh Sahure commanded a fleet of seagoing vessels in 2475 B.C. that were similar to river boat predecessors. Art in Sahure's pyramid show large ships filled with Egyptians and people from the Middle East. It appears as if the ships were returning from the Phoenician port of Gebal (later renamed Byblos by the Greeks). Gebal (Byblos) was located on the Mediterranean coast, and was a busy port of trade from ancient times. In fact, timber and stone for Solomon's temple were prepared by craftsmen from this city, as recorded in I Kings 5:18. Sahure's pyramid art shows the ship laden with huge cedar trees. Sahure's cartouche, his royal insignia, has been found on stone vessels in modern Lebanon, the site of ancient Gebal, later named Byblos.



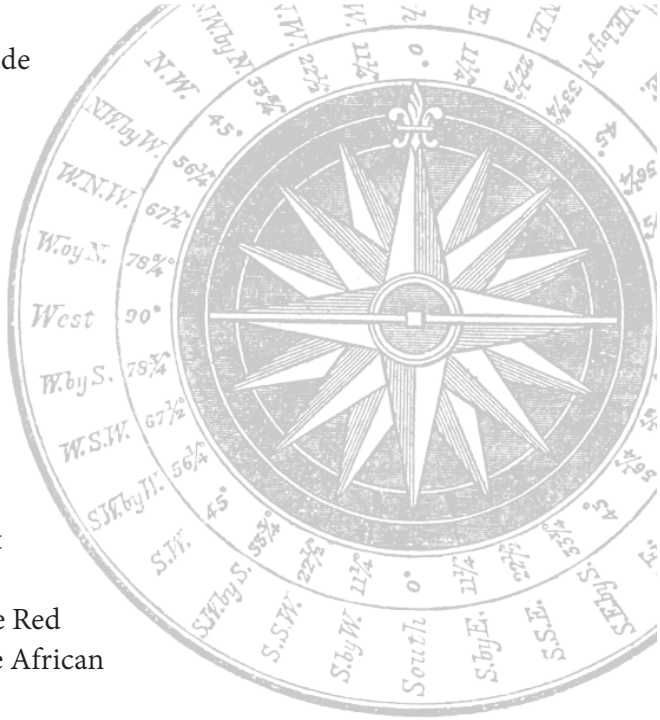
The Egyptians established a solid trading relationship with the Phoenicians. Pharaohs from the First Dynasty used Phoenician timbers in their construction. Many Egyptian artifacts dating from the Fourth Dynasty and onward have been found at Gebal. In fact, one of the oldest Egyptian words

for an ocean-going boat was the equivalent of "Byblos ship." Later, Egyptians traded also with the Phoenician cities of Tyre and Sidon as well.

Pharaoh Sahure was also the sponsor of the first recorded expedition to the land of Punt. Today, the exact location of this kingdom is unknown; it could be a kingdom in Arabia, but most scholars feel that Egyptians sailed south through the Red Sea to the coasts just north of and on the horn of Africa. Today the countries of Eritrea, Somalia and Djibouti are in this area. Other expeditions to Punt followed Sahure's trading trip, in the Sixth, Eleventh, and Twelfth dynasties. However, the trade networks that Egypt established were eventually disrupted when the Hyksos occupied Egypt in the Fifteenth and Sixteenth dynasties. The Asiatic Hyksos were finally expelled from Egypt at the end of the Seventeenth dynasty.

Then, during the Eighteenth dynasty, the headstrong Queen Hatshepsut came to power in Egypt. Hatshepsut organized and led an extensive expedition to Punt in 1480 B.C. Hatshepsut hoped to utilize the trade routes that had been abandoned during the Hyksos occupation.

The determined queen set out to re-establish trade relationships that had fallen to middle men and create direct trade relationships with some of Egypt's neighboring regions.



About a thousand years after Sahure's expedition, Hatshepsut's five-ship convoy set out. A millennium of ship development helped the fleet. Hatshepsut's ships had wide sails and sailed much better than Sahure's fleet. Her Red Sea fleet of five ships were created to bring back mortuary goods to Karnak in exchange for Nubian gold. Each ship was 70 feet long and held over 200 men -- both sailors and rowers. The expedition traveled throughout the Red Sea, and from Egypt to other locations along the African coast.

The Egyptians returned with a variety of goods including incense. The most remarkable export they carried home were 31 live myrrh trees, their roots kept in baskets as the fleet traveled back to Egypt. Hatshepsut is said to have planted the myrrh trees in the courts of her Deir el-Bahri mortuary temple complex. This complex, whose site was chosen by Hatshepsut, was the first of many pharaonic projects built at the site; it would later become known as the Valley of the Kings. During Hatshepsut's reign, Egyptian ships continued to cross the Red Sea regularly, bringing back copper, frankincense, ebony and carved amulets. The ships also traded for naptha and bitumen used during the embalming process for mummification. Hatshepsut's trading expeditions put Egypt in a position to once again be a world power, one whose status and wealth would be fully realized under Hatshepsut's more famous New Kingdom successors -- Thutmose III, Amenhotep II, Amenhotep III, Akhenaten, Tutankhamun, Seti I, and the powerful Rameses II.

EGYPTIAN RULERS EXPAND THEIR POWER

Hatshepsut's Eighteenth-dynasty successors were poised to guide Egypt to a zenith of power and influence, in no small part due to Hatshepsut's trading vision. Hatshepsut's successor was Thutmose III, who reigned as co-regent with this strong queen, who was his stepmother. When Hatshepsut was named queen, Thutmose served as head of her armies. Where Hatshepsut served her country by establishing trading routes and managing building projects, Thutmose used military means. His early experience under Hatshepsut's rule served him well; he became a military genius. He created the largest empire Egypt had ever controlled to that point. Thutmose conducted seventeen campaigns during the thirty-two years he ruled after Hatshepsut's death. Records of these campaigns were inscribed on the walls of the Karnak Temple of Amun.

Thutmose III began by winning an incredible victory at the Siege of Megiddo that gave him control of northern Canaan and gained him tribute from Assyrian, Babylonian, and Hittite kings. Continued conquests allowed him to begin transporting troops by ship to Byblos to aid in campaigning and controlling Syria. From Byblos, he had his army make boats, which they carried along with them over land to the Euphrates River. The Egyptians used the boats to cross the mighty river, then went from city to city, pillaging and collecting tribute. Thutmose III returned to Egypt in victory. His extensive conquests include episodes of such extraordinary strategy that he is considered a military genius today.

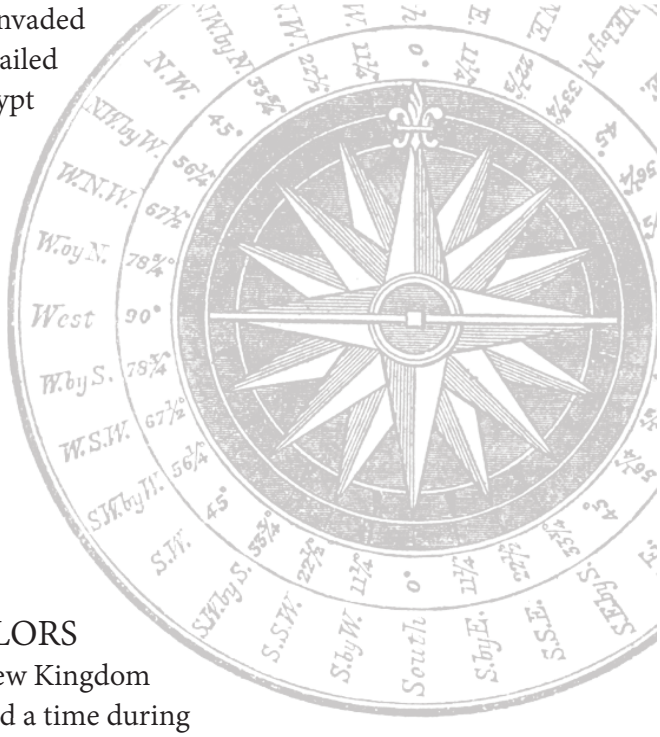
Amenhotep II took over his father's vast kingdom and conducted a few campaigns in Syria to keep it under Egyptian control. By the time his grandson Amenhotep III ruled, Egypt was at the height of its power in the Eighteenth dynasty. However, Amenhotep III's son Akhenaten undermined the traditional beliefs of the Egyptians by attempting to introduce the worship of just one god, Aten. By the end of his rule, Egypt was in turmoil and economically weakened. His son, the young Tutankhamun, came to the throne of Egypt in 1333 B.C. and restored the traditional worship of Egyptian gods. Tutankhamun died while still quite young, probably in his teens.

By 1292 B.C., the Eighteenth dynasty ended, and the Nineteenth dynasty began under the rule of Rameses I. Early Eighteenth dynasty rulers re-established order in Egypt after the upheaval begun under Akhenaten. Rameses I's son Seti I secured the land once held by Amenhotep III. In turn, Seti I's son Rameses II conducted a number of military campaigns to once again increase Egyptian prestige.

Egypt's army grew to about 100,000 men during Rameses II's lengthy reign, which lasted at least 66 years. During that time, Rameses defeated Sherden sea pirates who were raiding cargo vessels along Egypt's Mediterranean coastline. Rameses placed troops and galley warships along the coast, then waited for the pirates to attack the cargo ships. When they began looting the ships, Rameses and his army swooped in and caught the pirates by surprise; in the sea battle that followed, Rameses' army captured all the pirates. During Rameses II's rule, coastal forts were constructed along the Mediterranean coast from the Nile Delta and stretching almost 200 miles to the west as Rameses exerted control over the Libyans in northern Africa. Rameses' long reign allowed him to build and build and build! Many of his building projects still stand today. Rameses II brought an unprecedented prosperity to Egypt.

However, within 150 years of Rameses II's death, Egypt fell victim to the advance of the Sea Peoples, who first threatened Egypt during the rule of Ramses II's son Merneptah.

During the Twentieth dynasty, the Sea Peoples invaded Egypt by land and sea. These seafaring raiders sailed into the eastern Mediterranean and attacked Egypt in waves over the course of several generations. Though the Egyptians knew the identities of these raiders, no records survive that give us any clues as to who they were. Battles with these enemies slowly exhausted Egypt's treasury and led to a general decline of her power. Egypt would never again wield the influence it enjoyed during the New Kingdom's Eighteenth and Nineteenth dynasties.



THE PHOENICIANS: NATURAL SAILORS

Eventually, Egypt's glory days were over. The New Kingdom in Egypt collapsed in 1085 B.C., and this initiated a time during which we do not have records of progression in seamanship in the world. This "quiet time" in sailing history was ended when the Phoenicians entered world history about 900 B.C. Phoenicia was home to several important port cities: Byblos, Tyre, Sidon, Berytus, which is today known as Beirut, and the island-fortress city of Arwad, with its artificial harbor. These city-states were ideally situated along the east coast of the Mediterranean Sea where they could trade the region's natural resources with other city-states across the sea.

The Phoenicians were such illustrious seafarers and traders that Ezekiel wrote of them, "All of the ships of the sea and their sailors came alongside to trade for your wares." (Ezekiel 27:9b) He goes on to describe both Phoenicia's trading partners and goods. Greece brought bronze articles; from Asia Minor came horses and mules; Aram (in today's Syria) traded embroidered work and line, along with coral, rubies and turquoise; while Judah and Israel offered wheat, oil, balm and honey. Arabian traders imported wrought iron, aromatic plants and spices, and domesticated herd animals. Those from Babylonia sold marvelous fabrics, exquisite rugs, and embellished cloth. Traders from all over the known world were involved in "bringing [Phoenicia] splendor." (Ezekiel 27:11)

In addition to their reputation as a trading empire, the Phoenicians were magnificent sailors for their times, and they dominated trade in the Mediterranean Sea. They also ventured beyond the Sea, voyaging as far as the west African coast. The Phoenicians expanded their influence by establishing a trading base in Carthage on the north African coast around 814 B.C.

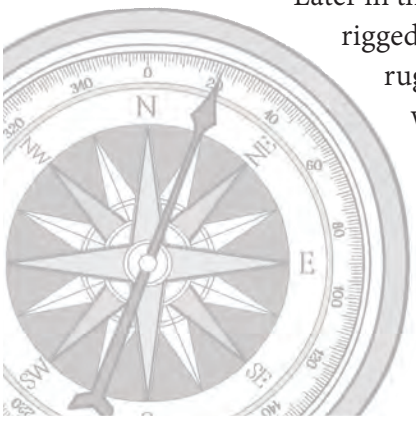
Carthage was located on a promontory in northern Africa with inlets on the sea to both the north and the south. The city's location placed it near, but across the sea from Sicily, off the coast of Italy. All ships from the western Mediterranean who hoped to head into the open sea had to pass through the narrowed waters between Carthage and Africa's northern coast and the island of Sicily. Likewise, those in the east who hoped to venture to the far west would travel by Carthage.

Founded in such a key location, Carthage quickly gained great power and influence. The city itself had massive walls that provided good protection for its wealthy citizens. Carthage created a huge navy whose marines were trained, even in peacetime, and given good wages. During the time of Rome, Carthage's sailors traded and explored out into the Atlantic, developing relationships with regions of west Africa and Britain. Their success was later envied by the Romans, who went to war with the city.

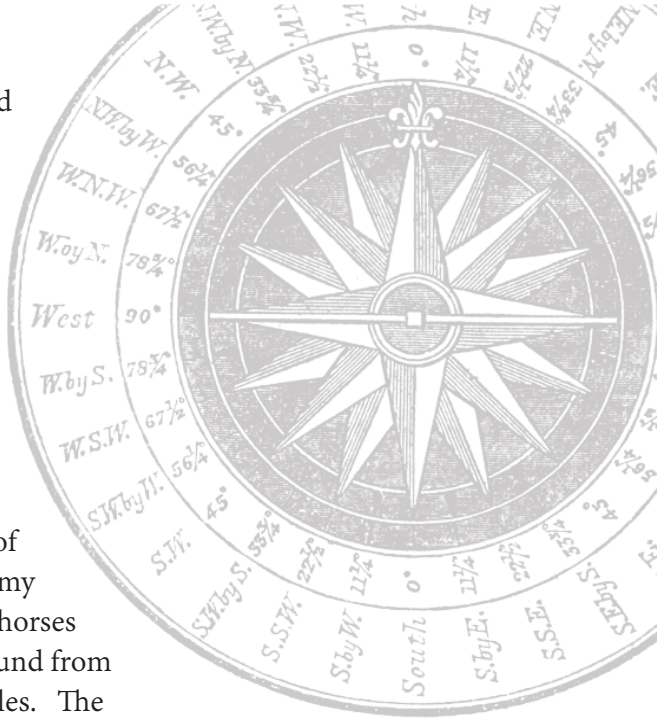
One of Carthage's citizens was Hanno the Navigator. There were a few famous "Hanno the Greats" in Carthage; Hanno the Navigator wasn't the same person as Hanno the Great, the gifted general who fought Rome in the Punic Wars. Around 500 B.C., Hanno the Navigator was sent by Carthage to explore and colonize the northwestern coast of Africa. Hanno, together with thousands of troops, sailed through the straits of Gibraltar, founded several colonies along the African coast, and returned safely to Carthage. He wrote about his voyage upon his return.

It is an odd thing that the Phoenicians are often known for two things: their sailing and their invention of an alphabet. Strangely, the people who devised the world's first known alphabet did not record for history anything about their ships. We do know a little about their ships from a couple of their enemies, the Egyptians and the Greeks. Not surprisingly, their enemies' descriptions are not flattering and it is hard to know how reliable their information is. It seems likely that the Phoenicians piloted some craft with deep hulls to carry the trading goods and cargo that motivated their journeys. Descriptions from the time describe figureheads, most probably in the form of animals, on their ships.

Later in their history, the Phoenicians sailed galleys. These ships, though rigged with square sails, could be propelled by oars wielded by gangs of rugged oarsmen. The oarsmen were sent to work when there was no wind to power the sails, or when the wind was contrary to their route. Oarsmen were also needed to maneuver the ship in close battles or a crowded harbor. The crew kept the galley within sight of the coast, as they had few navigational helps to safely cross open water, and the ships themselves were vulnerable in violent storms. Near the coast, crews could take advantage

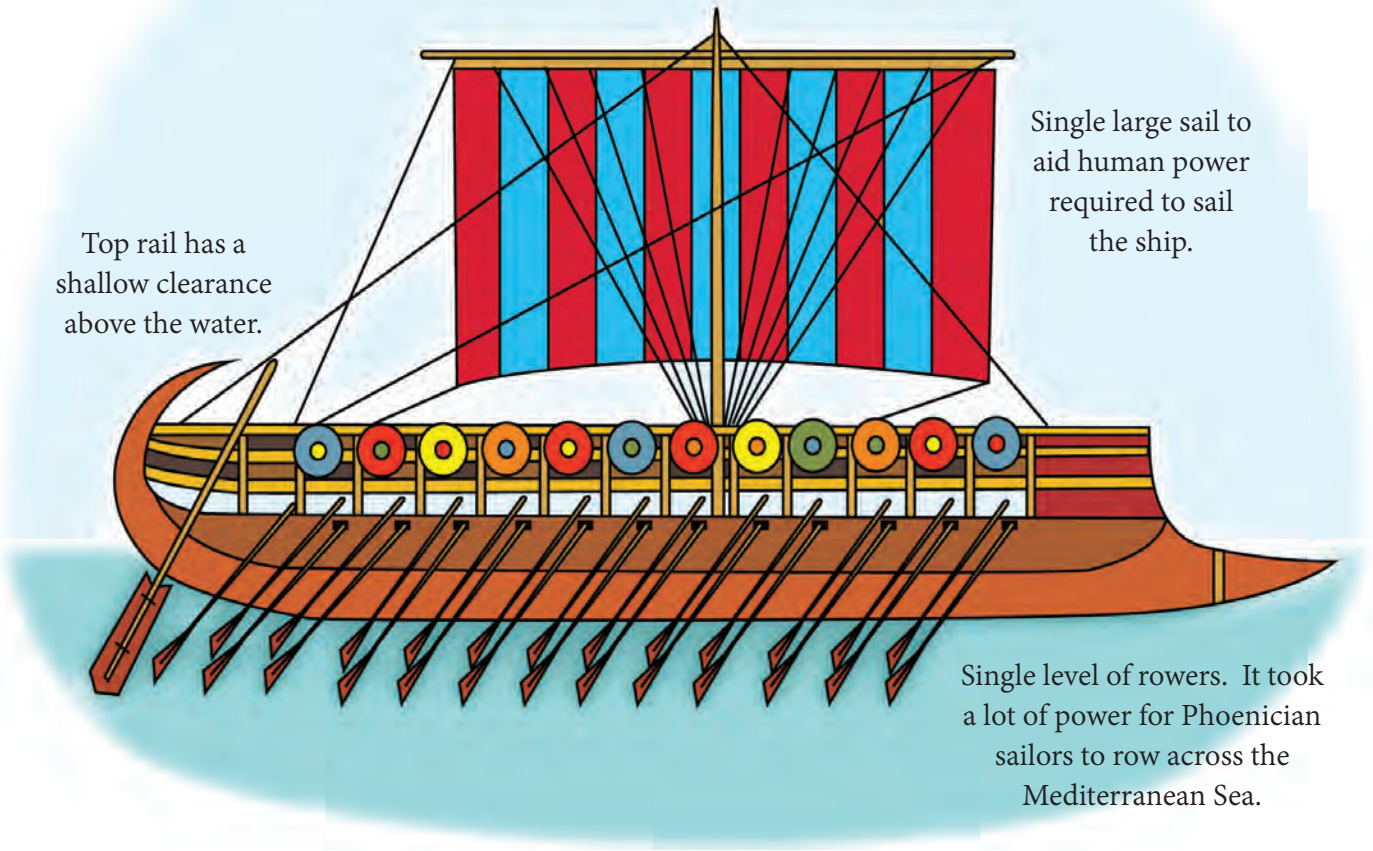


of coastal currents and winds to work around prevailing winds. In addition, the large crew and gangs of oarsmen needed fresh water regularly, which could be resupplied easily when the galley was kept near shore.



The galley was the primary warship of the Mediterranean area from c. 800 B.C. until the 1500's A.D. Galleys were ideal for getting around in the Mediterranean. Since they were not dependent upon wind power, galleys could navigate up rivers to launch surprise attacks on enemy city-states. Their crews could make use of small bays and beaches for harbors when in enemy territory, and the ancients were known to carry horses aboard ship, which were unloaded onto dry ground from the ship to provide cavalry support for land battles. The galleys' fairly shallow hull could navigate even in water only three feet deep. Ancient crews were able to drag the ships over land to other bodies of water during war campaigns.

PHOENICIAN MONOREME GALLEY



The Phoenicians and other shipbuilders of the time sought to build progressively more efficient galleys. They faced a challenge. To move a ship more quickly through the water required more physical effort. Ships of the time were monoremes, with one row of oars on each side. Through trial and error, shipbuilders of the era created the perfect monoreme -- one that could travel at the greatest speed with the fewest men. This "extremely engineered" boat was the penteconter, a ship powered by fifty men, twenty-five to a side. It was about 125 feet long and could reach a speed of 9 knots. Its design was so perfect, so efficient, that its speed almost matches that of modern racing boats!

SAILORS, WHALERS & ASTRONAUTS

Life on Ships That Sail & Soar

LIFE on SHIPS

What was life like on a ship?
Aboard sailing ships,
airships,
and spaceships?

Discover life on rolling seas,
up in the atmosphere,
and out in the vastness of space.

"They that go down to the sea in ships,
that do business in great waters;
these see the works of the Lord,
and his wonders in the deep."
Psalm 107:23-24

SAILORS

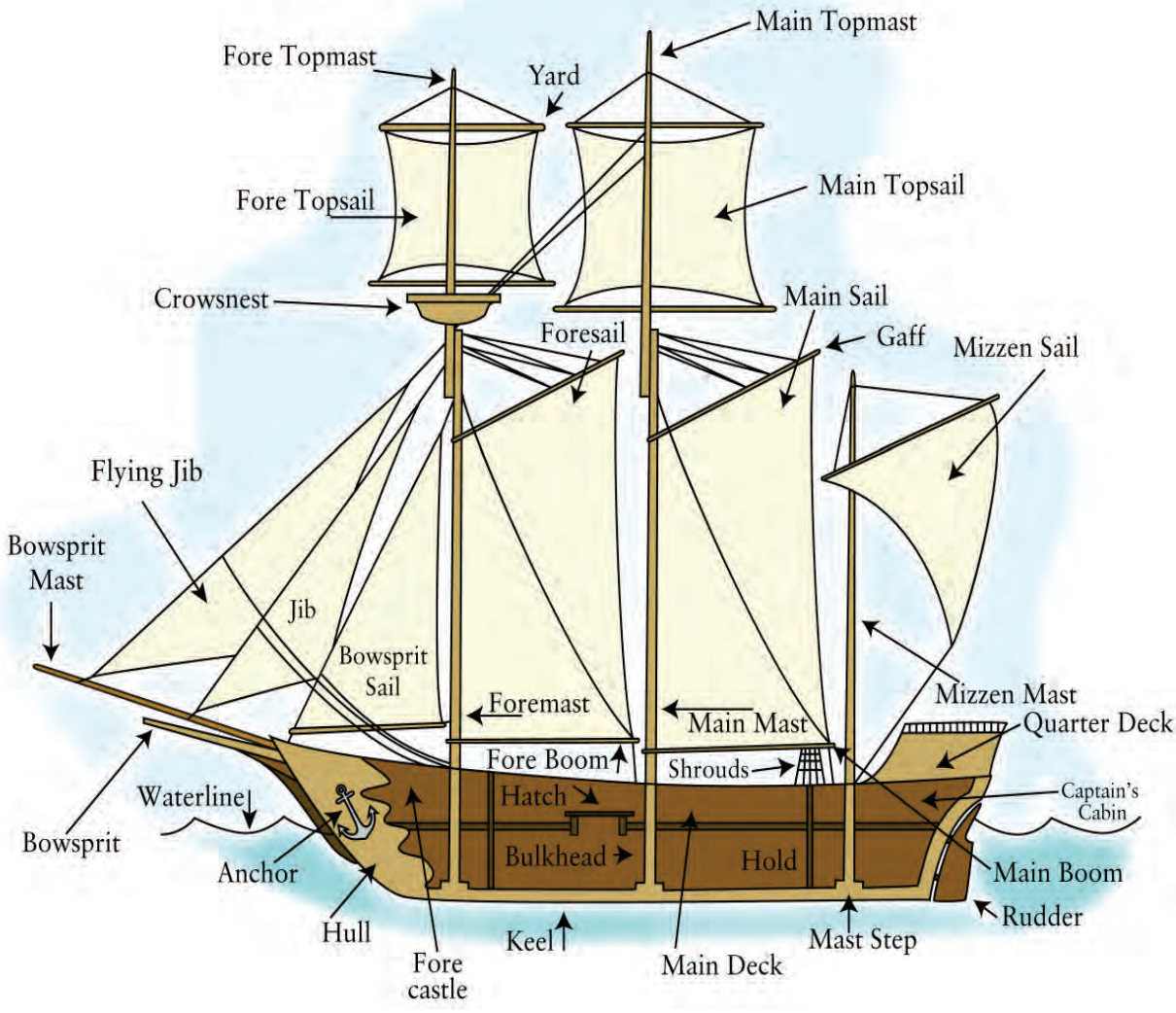
"The sea is everything.
It covers seven tenths of the terrestrial globe.
Its breath is pure and healthy.
It is an immense desert, where man is never lonely,
for he feels life stirring on all sides."

Jules Verne,
20,000 Leagues Under the Sea

PARTS of a SHIP

A three-masted sailing ship features three masts called the fore mast, the main mast, and the mizzen mast, all used for hanging square sails. A bowsprit mast anchors a triangular sail in place. The quarter deck is built above the level of the main deck, and is where the Captain's cabin is located. Crew quarters are below the main deck. The hold of the ship provides storage for food, cargo, and other supplies, such as gunpowder and tools. A rudder at the back steers the ship. Atop the main mast and the foremast are crow's nests where crew members look for storms and other weather changes, spot whales or ships, and look for land.

Take a look at the parts of this ship to learn the parts of a sailing ship.



BE A LOOKOUT

Every sailor took a turn as lookout. He stood watch on deck or in the crow's nest, constantly looking out over the sea. What were they watching for? Danger mostly, in the form of icebergs or sandbars, rocks or shoals, or approaching storms. A lookout watched for other ships, and looked at the flags they flew to see if they were friend or foe. They also watched carefully as the ship headed toward land, helping to navigate safely into harbor. The lives of everyone aboard a ship depended upon a lookout being alert at his post, and seeing anything that might put the ship at risk.

Aboard a whaler, a lookout was absolutely necessary. It was the lookout who scanned the horizon for whales, looking for spouting blowholes or pods of whales traveling together.

Why not stand lookout in your neck of the woods? You might be surprised by everything that's going on!

Here's What To Do:

Sit in a place where you can see a lot of what's going on in your neighborhood. Sit quietly and just observe. Be sure to take note of these things:

Weather Changes
Nature Noises & Appearances
Traffic & Transportation
People Coming or Going
Smells You Observe

Write down what you observed. How many things did you notice that you would not have if you weren't looking for it or noticing sounds?

SAILOR LINGO

Sailors live a unique life at sea. Sailors pretty much spoke their own language, one a new hand had to learn when he became a sailor. The ships had specialized names for masts, ropes, rigging, and sails, but sailors routinely shortened them or gave them nicknames. Sailors also developed their own words for weather, tradition, and the challenges they faced at sea. Let's discover what kinds of phrases you might encounter at sea!

Places on a Ship

Bow - the front of the ship

Stern - the rear of the ship

Port - on a ship, the left side as you face forward

Starboard - the right side of a ship as you face forward

Fore - towards the bow; front of the boat from amidships

Aft - towards the stern; back of the boat from amidships

Aloft - above the deck or overhead in the rigging

Galley - ship's kitchen

Berth - a narrow sailor's bed or a slip where a boat is moored

Binnacle - the pedestal where the ship's wheel is mounted that holds the compass and navigational equipment.

Bulwark - a railing around the deck of the ship; it kept things from going overboard and the seas from coming aboard

Helm - the wheel or tiller controlling the rudder

Poop - stern section of a ship

Rope, Masts, Rigging, and More

Cleat - a device of wood or metal with two horns around which ropes are made fast

Anchor Cable - a heavy rope or chain fastened to the anchor to raise or lower it

Rigging - the lines, ropes, chains and tackle that control the sails

Cast Off - To let go of a line, be free of mooring Bowline - a knot used to form a loop in the end of a line

Bale - metal ring on a boom, pole, or mast that was used to attach blocks or shackles

Bitter End - the end of a line or the last chain link

Bare Poles - a boat under way with all sails furled

Davit - a hoist that projects over the side of a ship and is usually used for boats, anchors, or cargo

Fast - to secure, tie off, knot or fasten

Furl - to lower a sail or bring it in partially furled to reduce the amount of sail area in use without completely lowering the sail

Reef - to reduce the sail area

Slack Away - to let out a line

Snub - to stop the running out of a line by taking a turn around a cleat

Stays - rigging used to support the mast from forward or aft

Trim - trim is to adjust

Sheet - a line used to trim a sail

Yard - Spar from which a square sail is hung

Talking “Sailor Talk”

Ahoy - a greeting or hail

Landlubber - a term for a person who spends their life, or most of it, on land

Mate - a friend or companion, it sometimes referred to the crewman with whom you shared your hammock, as one slept in it while the other was on duty, and vice versa

Messmates - the men that live or eat together

Tar or Jack Tar - a sailor

Sea Lawyer - an argumentative crew member

Scuttle-butt - the scuttle-butt was a cask of fresh water used for drinking on the deck of a ship; men would gather here and pass along ship gossip, which also became known as scuttle-butt

Ditty Box or Bag - a small box or bag in which sailors kept personal possessions, such as letters, souvenirs, sewing supplies, and so on.

Sea Legs - a sailor has “sea legs” when he has grown accustomed to the motion of the ship

Jump ship - when a crew member is absent from duty without permission

Yarn - a sea story that typically only contains a little truth

Davy Jones’ Locker - the bottom of the sea

Crossing the Line - a ceremony that takes place when a ship crossed the thirtieth parallel or going through the Straits of Gibraltar; it celebrated the first time novice crewmembers had “crossed the line,” and included a party and other traditions

Show His True Colors - to reveal who you really are, originating from ships that flew one flag to draw a ship in close, then raised another before firing on the ship they had lured to them

Zero Dark Thirty - late at night or early in the morning

Boxing the Compass - naming the 32 points of a compass in order

Cardinal Points - compass points of north, east, south, and west

Stow - to put stuff away

Toe the Line - a punishment, standing with your toes at a deck seam (line) for a lengthy period

Other Stuff Aboard a Ship

Cask - a barrel for holding liquids

Java - coffee

Gig - a captain's own boat

Ballast - weight placed in a boat's bottom to give it stability in the water; crew on the high side can be called movable ballast

Ship Construction

Keel - the backbone of the ship, the timber upon which the rest of the ship is built

Beam - the width of a ship

Mast - a vertical pole that supports sails, yards, and rigging

Yard - a long spar or pole tied to a mast that helps support the spread and weight of a sail

Hawsehole - a hole in the bow of the ship made for the anchor cable to pass through

Bulkhead - transverse walls separating parts of a ship

Ship Movement

Pitch - movement of a ship as its bow dips, then its stern dips

Aground - when a vessel is resting on the bottom or on rocks

Adrift - not fastened to a fixed mooring

Way - the ship's movement through the water; it is the origin of saying, "We are under way."

Before the Wind - having the wind come from behind the ship; going the same direction as the wind is blowing

Bring about - to reverse directions, turn around

Dead Reckoning - to plot a future position based on travel from a known position, using speed, time, and course

Yaw - to move from side to side

Ship Routines

Watch - a four-hour period during which some of the crew are working and some are not; a watch can also be the name of the sets of sailors that share duties during those four-hour periods

Mess - a set of men that live or eat together

Weigh Anchor - to hoist the anchor off the bottom

Field Day - a day used to thoroughly clean the ship

Bright Work - wood trim and metal that needed polishing on a ship

Swab the Deck - mop the deck

Weather, Wind, and Sea

Downwind - with the wind

Fathom - a way of measuring the depths of the ocean, a fathom was the distance of an outstretched sailor's arms from fingertip to fingertip

Sound Off - sailors "sounded off" by shouting the number of fathoms they measured when they sounded the depth in unknown water

Chop - short waves at rapid intervals

Scupper - a hole that allows water to run off the deck

Telltale - a length of yarn or other lightweight material attached to the sails, shrouds, or other parts of the boat that is used as a wind flow indicator of the apparent direction of the wind

In the Doldrums - on either side of the equator is an area in the ocean where there are light winds or none at all; these areas are known as the Doldrums, and this expression came to mean any ship that was becalmed, or could not sail because of lack of wind

Plumb the Depths - lower a plumb or lead weight attached to a rope into the sea to test the depth of the water

Stem the Tide - to sail against the tide fast enough to move faster than the tide in the opposite direction

Zig-Zag - the action of a sailing boat tacking to windward

Commands

Avast - a command to stop or cease; probably from the Dutch "*houd vast*," meaning "hold fast"

Belay - a command to stop doing an action or disregard a previous order

Shake a Leg - a command to get out of your hammock and get to work

COMING ABOARD

A crew on a ship included the officers, the seamen, and crewmen called idlers. Idlers were crew members who specialized in one area. Idlers worked during daylight hours and slept at night, rather than being a part of the watch system that ruled the other crewmen's lives. Idlers included the cook, the sailmaker, the cooper who made barrels, the steward, the ship's carpenter, and, if the ship were large enough, the ship's doctor.

Officers included the captain and his first and second mate. Merchant ships had an officer called the supercargo who sold the ship's merchandise at the ports to which the vessel sailed, and bought and took in goods to be carried back to the ship's home port.

Merchant ships also had a boatswain, who was skilled in working with rope and rigging, and supervised the crew by scheduling and assigning work. A boatswain, often called the bos'n or bosun by the crew, planned the day's work, and assigned tasks to the deck crew. He saw to it that the work was completed as ordered. A good boatswain had mastered a variety of skills so that he could oversee the loading of cargo, use his knowledge of ropes and knots to moor a vessel, and work the anchors. He would be called upon to help lead a firefighting effort or take care of other emergencies, and generally bring their skills to bear in all ship operations by supervising or communicating with other crewmen.

The boatswain ranked above the other crew members, who included the able-bodied seamen, ordinary seamen, and cabin boys. Able-bodied seamen were the most skilled, as they could work the rigging, steer the ship, and perform all other sailing duties. Ordinary seamen had mastered standard knots, understood the rigging, and could set and furl sails. Cabin boys did a little of everything that required a lot of running and scrambling and little skill. They waited on officers, carried messages, helped the cook, and climb the sails and rigging.

THE WATCHES

Aboard a ship, time was ruled by bells. The helmsmen aboard a ship rang the ship's bell on the half hour and the hour. When the bells rang, the lookout called out "Two bells and all is well!" (mentioning the number of bells that had rung. This call assured all aboard ship that the ship was running as it should.

There were eight bells rung during every four hour watch. No matter where you were aboard ship, you knew what time it was, and how far into a watch you were, since each man worked a four-hour watch. Many men aboard a ship could not read a clock, but they understood how the bells measured time. Since a bell was rung every half hour, a watch that extended from eight o'clock in the morning until noon was measured by bells this way:

8:30 am	one bell	10:30	five bells
9:00 am	two bells	11:00	six bells
9:30 am	three bells	11:30	seven bells
10:00 am	four bells	12:00	eight bells

As the ship headed out of its home port, the men aboard ship were divided into two groups, the larboard (later called *port*) watch and the starboard watch. The first and second mate each headed a watch, and each chose who they wanted to work with during the voyage. The first mate's crew was responsible for the left and forward part of the ship, while the second mate's crew took the right and aft portion.

The two groups took opposite watches, so that half the crew was working, while the other half was sleeping or relaxing. Crews switched watches every four hours, all day and night, so that a sailor never worked longer than four hours at a time, but he never slept longer than four hours at a time, either. The only exception to four-hour watches was from 4:00 pm to 8:00 pm each day. This watch was broken into two watches called the first and second dogwatch, from 4:00 to 6:00 and 6:00 to 8:00. The dogwatches ensured that sailors weren't on duty the same hours every day, but rotated between two different schedules every other day.

FURL A SAIL

Want to know how a sail was furled onto a mast? Make a model yourself.

What You Need:

A white pillowcase 3 medium-sized safety pins Yarn
Sturdy clothes hanger Scissors

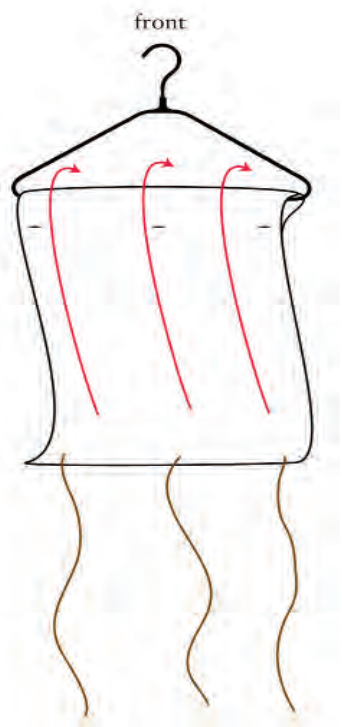
What To Do:

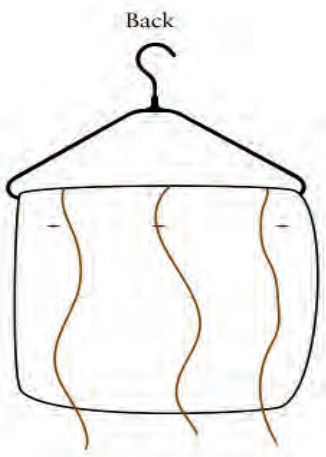
Cut three pieces of yarn four feet long. Fasten one piece of yarn onto each safety pin, tying it onto the circular part of the pin. Fold the pillowcase in half over the bottom bar of the hanger.

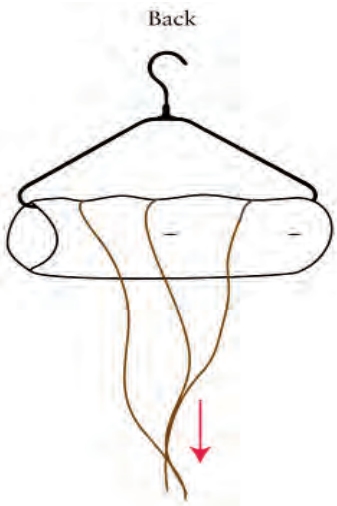
Using the safety pins, pin together the ends of the pillowcase in three places: at the left, middle, and right of the bottom edge of the pillowcase.

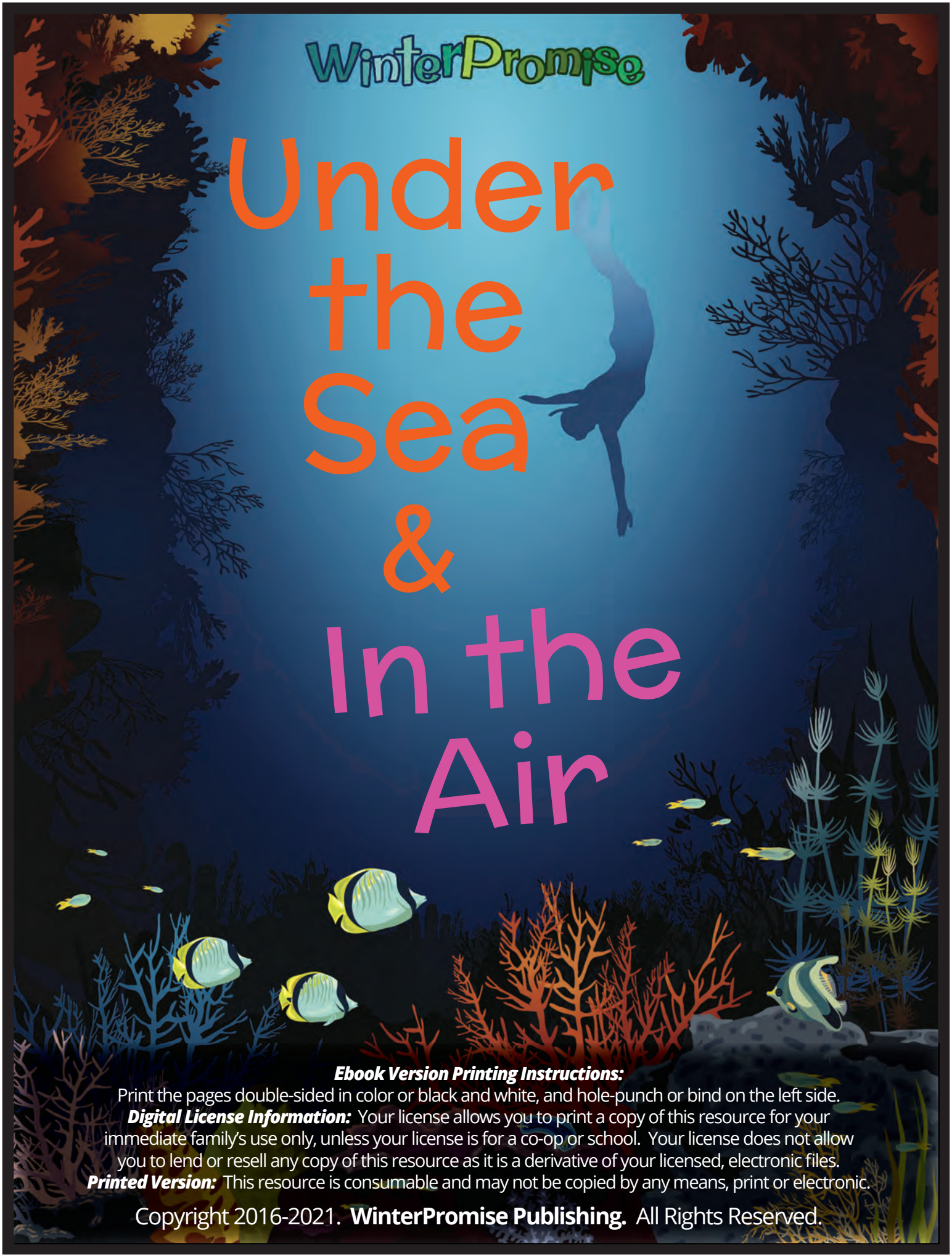
Pull the yarn pieces loosely up over the pillowcase on one side, and let them hang down on the opposite side. Now you are ready to furl your sail!

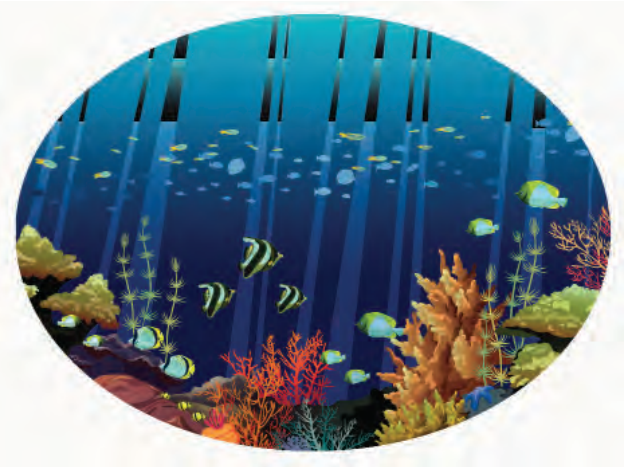
Pull down on the three pieces of yarn at the same time. The sail should pull up to the hanger. Then, tie the yarn around the sail to capture it up against the hanger.

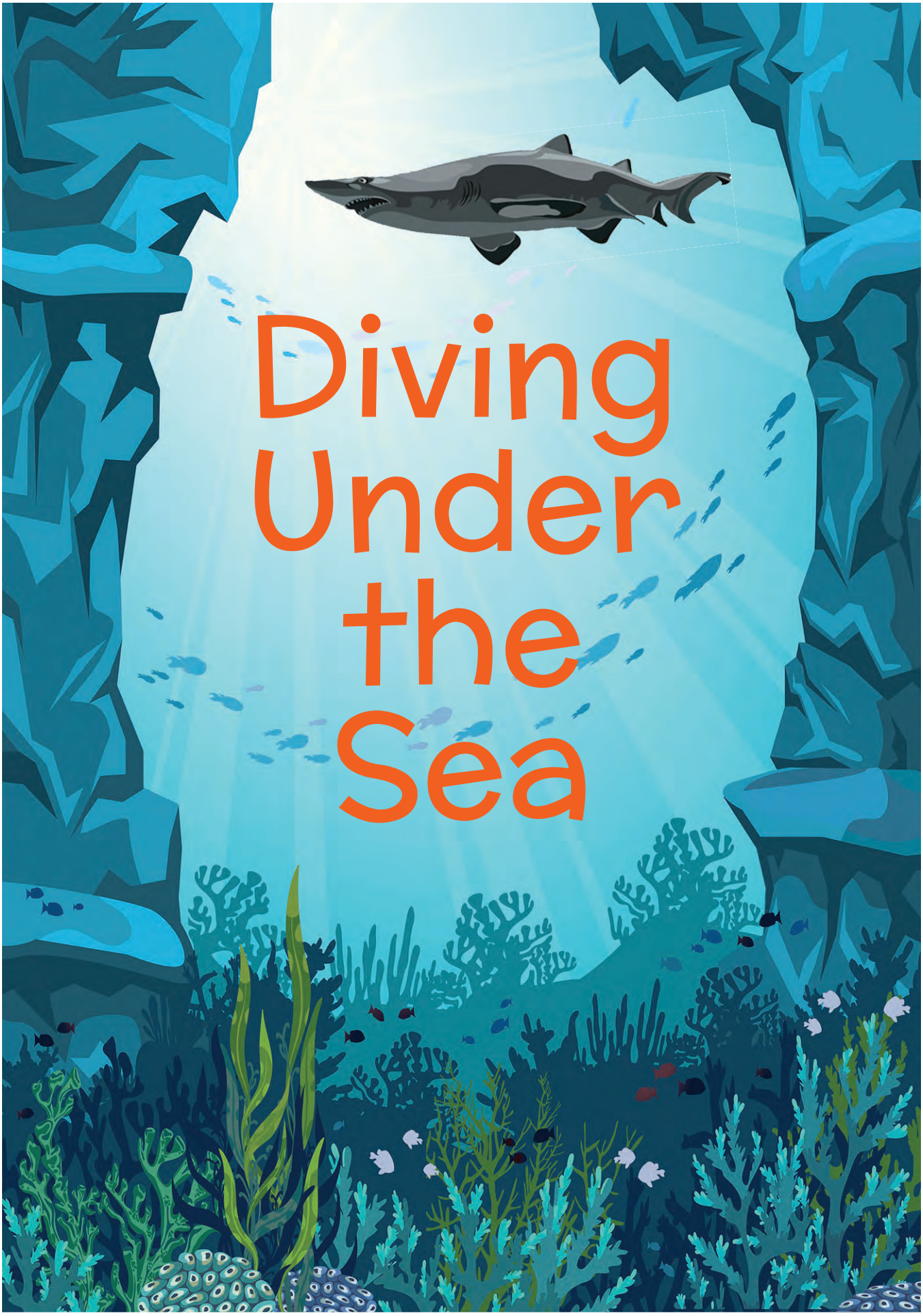











Diving
Under
the
Sea

Under the Sea & In the Air

Different Bodies of Water

Oceans, Seas, Bays and More

If you look at a map or globe, you'd see many different water bodies -- **seas**, **oceans**, **bays** and **gulfs**. Maps show these water features as flat, but underneath their smooth, watery surfaces lie rugged terrain that looks just like land! The earth's tallest mountain is actually under water! So is its deepest canyon.

Although seas and oceans are named as separate bodies of water, there really are no boundaries that divide them from each other. They are all connected -- one giant ocean. The land that is higher than the water's surface are continents. Most of the world's land surface is in the Northern Hemisphere.

There are four oceans: the Pacific Ocean, Atlantic Ocean, Indian Ocean and Arctic Ocean. Seas are bodies of salt water like oceans, but are smaller. They may, or may not be part of an ocean. You may be familiar with famous seas like the Mediterranean Sea, the Red Sea, the Black Sea or the Caspian Sea.

Other bodies of water are closely associated with oceans. They are:

- **Bay** - an area of water bordered by land on three sides
- **Cove** - a circular inlet with a narrow entrance
- **Estuary** - a body of water along a coast that is somewhat enclosed, has one or more rivers or streams flowing into it, and has a free connection to the open sea
- **Gulf** - a part of an ocean that is surrounded by land on three sides, but is larger than a bay
- **Lagoon** - a shallow-sediment-filled body of salt water separated from the deep sea by a shallow or exposed coral reef or sand bank.
- **Strait** - a narrow channel of water that connects two larger bodies of water; it lies between two land masses.

Can you tell by looking at a globe which ocean is biggest? If you said the Pacific, you'd be right. In fact, if you put all the water together from the other three oceans, they'd about equal the amount of water in the giant Pacific.

A distant second in size is the Atlantic Ocean. Though it is about as long as the Pacific, it is less than half as wide! Its widest point across is just over 4,000 miles across, while the Pacific is about 12,000 miles across! Wow!

Under the Sea & In the Air

Activity - How Much Water?

What You Need:

- 9 x 9 baking pan
- Large drinking glass
- Water

Looks are deceiving, especially when it comes to guessing how much water is in a body of water. Why? Because water's flat surface gives no clue as to what lies beneath. For instance, if you came to a wide puddle in the road, how would you know if it was too deep to drive through? Many people have flooded their car engines driving through water that is deeper than they thought it was!

Demonstrate this yourself by finding a 9x9 pan such as you'd use for brownies, and the biggest drinking glass in your kitchen. Fill the glass with water, then dump it into the pan. Fill the glass again. Compare the surface area. If you could only see the surface, which would appear to be filled with more water? What does this show?

Under the Sea & In the Air

Activity - Ocean Cupcakes

What You Need:

- Cake mix & required ingredients, plus cupcake baking pan and cupcake paper liners
- Pre-made white frosting
- Blue and green food coloring

With an adult's help, make 12-24 cupcakes by following the directions on the cake mix. The number you make will be determined by how big your cake mix is. When the cupcakes are cool, you can frost them, and learn something about the ocean at the same time!

Divide the frosting into two parts. About 1/4 of the frosting should go into a small bowl, where you can mix green food coloring into it. Mix blue food coloring into the rest of the frosting. If you made 12 cupcakes, frost eight of them blue, three of them green, and one of them half blue and half green. If you made 24 cupcakes, frost 17 of them blue and seven of the green.

The blue food coloring stands for the world's oceans, while the green is the land. Can you see how much of our world is covered in water? Arrange the cupcakes in a circle with the green in the middle. How does it look, now? How much of the globe is covered in water? About 70 percent!

Under the Sea & In the Air

Our Blue Oceans

Blue, Green, or Gray?

So what color is the ocean? Head to the beach to try this "magic trick" and see. First, just take a minute to look at the ocean and observe its color. Is it blue? It looks blue! Then, wade into the water and scoop up a pail of ocean water. Look down at it. Hey, where did all that color go?

Ocean water is just as clear as water you get from your sink at home. Instead, the pretty blue we see is actually reflected light rays. Of course, what you pulled up in your pail isn't really enough water to reflect the blue rays and make the water appear blue.

You may have studied light before, but here's a little more about how it works. Daylight is called white light, but is made up of wavelengths of different colors. We see this when the white light is separated. You've seen this separation happen when sunlight hits your favorite CD. The white light separates into its several colors, so you can see the whole color spectrum: red, orange, yellow, green, blue, indigo, and violet. These colors are also separated when they form rainbows.

Now, when white light shines on the ocean, all of these colors except blue are absorbed by the water particles, so the colors seem to disappear. But the blue ones? The blue rays bounce back, reflecting like images from a mirror. The sky looks blue for the same reason. On a sunny day, when the sky is especially blue, the ocean looks especially blue becuase of the blue rays it is reflecting, plus the additional blue that is reflecting down on it from the sky!

Some parts of the ocean, though, don't really look blue at all! Plant life, sediment, or chemicals can color water so it doesn't appear blue. The Red Sea is a good example. Its waters are filled with a dark red algae that gave it a colorful name. The Black Sea has a higher level of hydrogen sulfide. It makes the water smell like rotten eggs, but also supports a unique microbial population that gives it a dark gray color.

Under the Sea & In the Air

Activity - Find That Body!

What You Need:

- Globe

Try to find some famous bodies of water using the clues below. Check the box when you find each.

- ☐ Strait of Gibraltar, between Africa and Europe; near the Mediterranean.
- ☐ Persian Gulf, between Saudi Arabia and Iran near the Arabian Sea.
- ☐ Bay of Bengal, southeast of India.
- ☐ Gulf of California, west of Mexico.

Under the Sea & In the Air

How Many Oceans?

So How Many Oceans Are There?

Of all the questions you might have about oceans, this might seem like the simplest one to answer, but scientists don't all agree on how to count the oceans. Some scientists think they are four, while others would say there are five.

Here's why. Actually, all of the oceans are linked together all over the world, so really one could say there's only one ocean. But that wouldn't be very helpful to geographers or travelers, either, would it? Geographically, land masses on the earth's surface divide ocean waters into roughly separate bodies. Three of these bodies separated by land are the Pacific Ocean, the Atlantic Ocean, and the Indian Ocean. Two more bodies of water are also typically called oceans. The Arctic Ocean covers the top of the globe, and the Antarctic Ocean covers the bottom of the globe. That would be five oceans.

But some scientists aren't sure it is right to count the Antarctic as a separate ocean, since it isn't separated by land much at all from the Pacific, Atlantic, and Indian Oceans. They say it makes more sense to count the Antarctic Ocean as the southern portions of these three oceans. These scientists say that makes just four oceans.

At least things are a little less confusing when you begin to count seas. Seas are smaller bodies of salt water. Many seas are completely, or almost entirely enclosed by land. The Mediterranean Sea and Black Sea are good examples of these types of seas. Other seas are actually part of oceans nearby countries, but for geographical purposes, it makes it easier to refer to these regions near the coasts as seas. The East China Sea and Carribbean Sea are good examples of these types of seas.

Under the Sea & In the Air

Activity - What Type of Sea?

What You Need:

- Globe

Look at a globe, and decide if each sea below is mostly enclosed by land, or associated with ocean-bordering countries.

Caspian Sea	Bering Sea	Sea of Japan
Adriatic Sea	Red Sea	Coral Sea

Under the Sea & In the Air

Oceanography

Studying the Ocean

You may know that **oceanography** is the study of the ocean. But did you know that people didn't formally begin studying the ocean until modern times? Though people had been sailing since ancient times, and sailors had learned a lot about the ocean, people had very little knowledge of the ocean, its waters and the life forms it contained.

One of the first scientists to embark on a study of the ocean was American Matthew Maury who served in the United States Navy. Maury was a gifted scientist who studied astronomy, meteorology, geology; he even made maps! In 1825, when he was just nineteen, he joined the U.S. Navy and began studying the ocean. He learned as much as he could about navigation and weather at sea.

After Maury received a leg injury, he was made the Superintendent of the Naval Observatory, where he pored over thousands of ship charts and logs. He learned so much about ocean currents that he published the Wind and Current Chart of the North Atlantic; this allowed sailors to use both to their advantage and reduce their time at sea on the Atlantic Ocean. The way Maury collected data about the ocean was soon adopted by navies around the world to develop charts for other areas of the world, especially the major trade routes. He is considered to be the founder of oceanography.

Later scientists built on Maury's work and began studying what was under the ocean's surface. In what was the first global marine research expedition, the HMS Challenger was fitted to conduct research on the ocean by traveling all around the world's oceans from 1872 to 1876. To complete her mission, all but two of Challenger's guns were removed to make room for research equipment. Laboratories and a dredging platform were installed. Specimen jars, alcohol, microscopes, dredges, thermometers and devices to collect samples of all kinds were jammed into the ship. Under the leadership of Sir Charles Wyville Thomson, a team of scientists dropped buckets on ropes over the side of the ship and explored fish and plants that were brought up to the surface. They measured the depth of the ocean by sounding: dropping a line with a weight at the end. Scientists aboard brought back about 4,700 new species of marine life, and conducted almost 500 deep sea soundings.

The work of scientists on the HMS Challenger laid the foundation for the new science of oceanography. Scientists began studying ocean life (**marine biology**), the ocean's water movement (**physical oceanography**), ocean water and its chemical characteristics (**chemical oceanography**), and the ocean's floor, beaches and sea fossils (**geological oceanography**). Though the Challenger used some basic techniques, many of these same types of techniques are used today to bring samples up to the surface from the ocean floor. However, much of the ocean floor is still unexplored!

MAKE-YOUR-OWN CAPTAIN'S LOG

WinterPromise


A SHIP,
INSIDE
& OUT

A SHIP, INSIDE & OUT

Long, long ago, people figured out how to travel on the water in vehicles that could float. What kinds of boats did ancient men create? For what did they use their boats?

It's time to embark on a journey on which you'll follow the history of the ship. As you travel, you'll see that the history of the ship makes all the difference in the history of the world!

You'll start out by discovering the answers to some questions you may have always had about ships: Why do we call some sea vessels ships and others boats? What are the parts of a sailing ship or a powered vessel? How does a ship move? What were the first types of ships that took to the sea? And -- as you've probably wondered -- what makes a person seasick?

DESTINATIONS THIS WEEK

History Port: Embark on Your Study of Ships
Boats of Ancient Peoples, Ships vs. Boats, Parts of a Ship, How a Ship Moves

Science Port: Dive into Your Study of Oceans
Earth's Massive Oceans, Amazing Design in the Oceans, Oceans in Human History, The Color of the Ocean

Culture Port: Basics of Being Aboard a Ship

Geography Port: Geography is a Place

Coming Aboard the Seafarer

"My name? Hawk. Well, I mean, Matthew Hawkridge, actually. That's my real, on-land name. But at sea, they call me Hawk.

"I've been aboard the Seafarer since I was ten years old. My family needed the money they'd get by putting me aboard to serve as cabin boy. Now I'm thirteen, but I'm here to show you the ropes of being aboard a sailing vessel, living at sea.

"Let's see. A name for you. Hmmm. We'll call you Crow, since I heard you cawing so much about coming aboard in the first place. I'm not sure if you're cut out for this, but there's no way to know until you're out on the waves. You take my place as cabin boy, and I get to move up to deck hand. I'm all set for that job, since I've been "learning the ropes" around here for a long time.

"Don't worry. You'll get your turn. But for now, you 'd make yourself busy. No one's going to keep a cabin boy who doesn't know how to scrub the deck. Grab that mop and that bucket over yonder. Pull up some water, and get to work. This is the last you'll see o' land for awhile, so you might want to grab a last glance as we leave the harbor."

Sailor Talk

Almost as soon as you got busy, your fellow crewmates started telling you things, using expressions common to sailors. Write out what each of these comments means.

"Ya look a landlubber by the cut o' your jib." _____

"Get ya busy, or the cat'll be out of the bag." _____

"Are you in everybody's mess and nobody's watch, Crow?" _____

"Careful, boy, the sail's footloose!" _____

"Splash me and I'll square the yards with ya!" _____

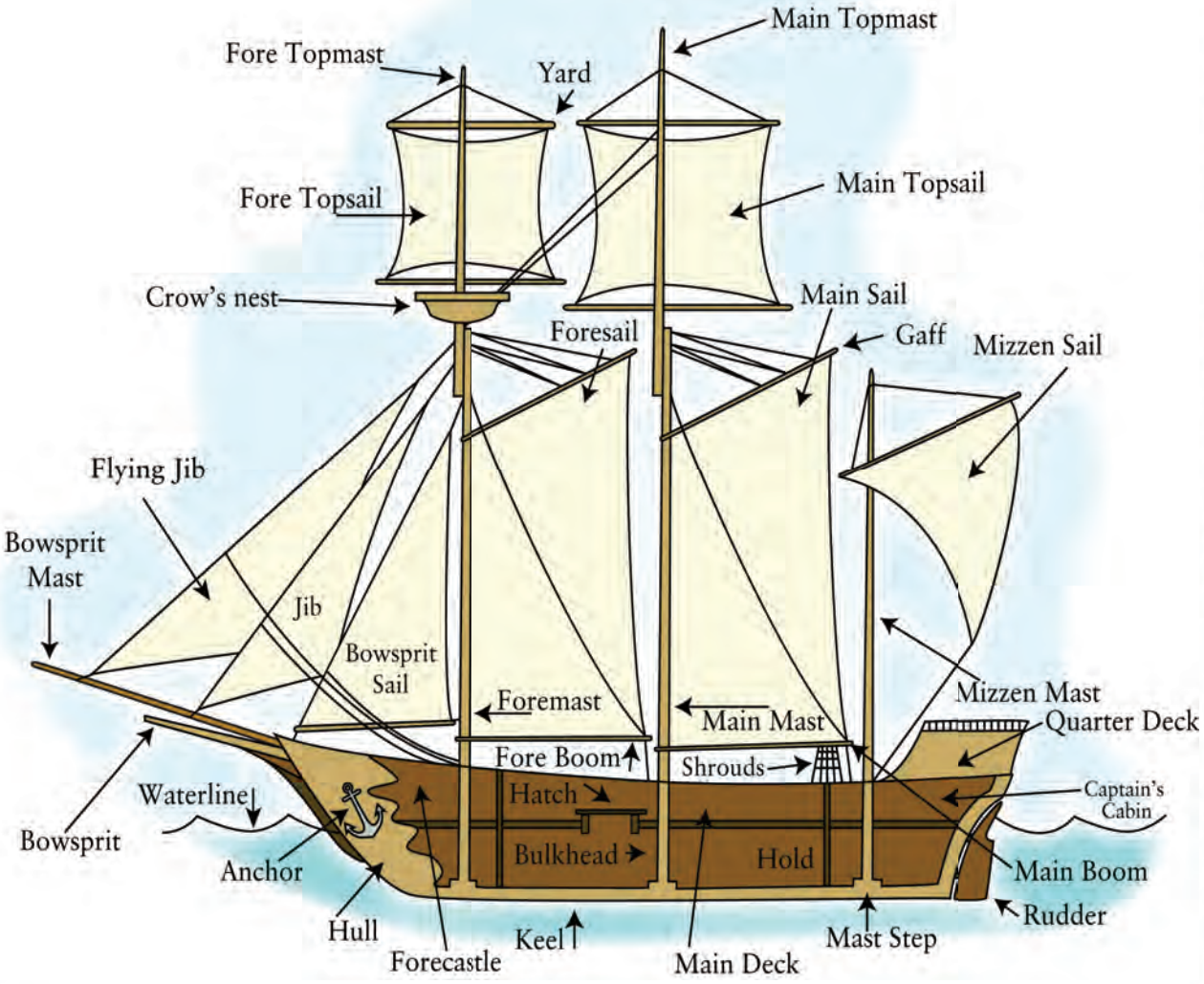
"He's always ready to rig his yarn tackle." _____

"Boy, help me try a different tack, here." _____

"Meet you near the scuttlebutt later, Crow!" _____

Parts of a Ship

The *Seafarer* is a fine, three-masted ship. Take a look at each of her parts below.

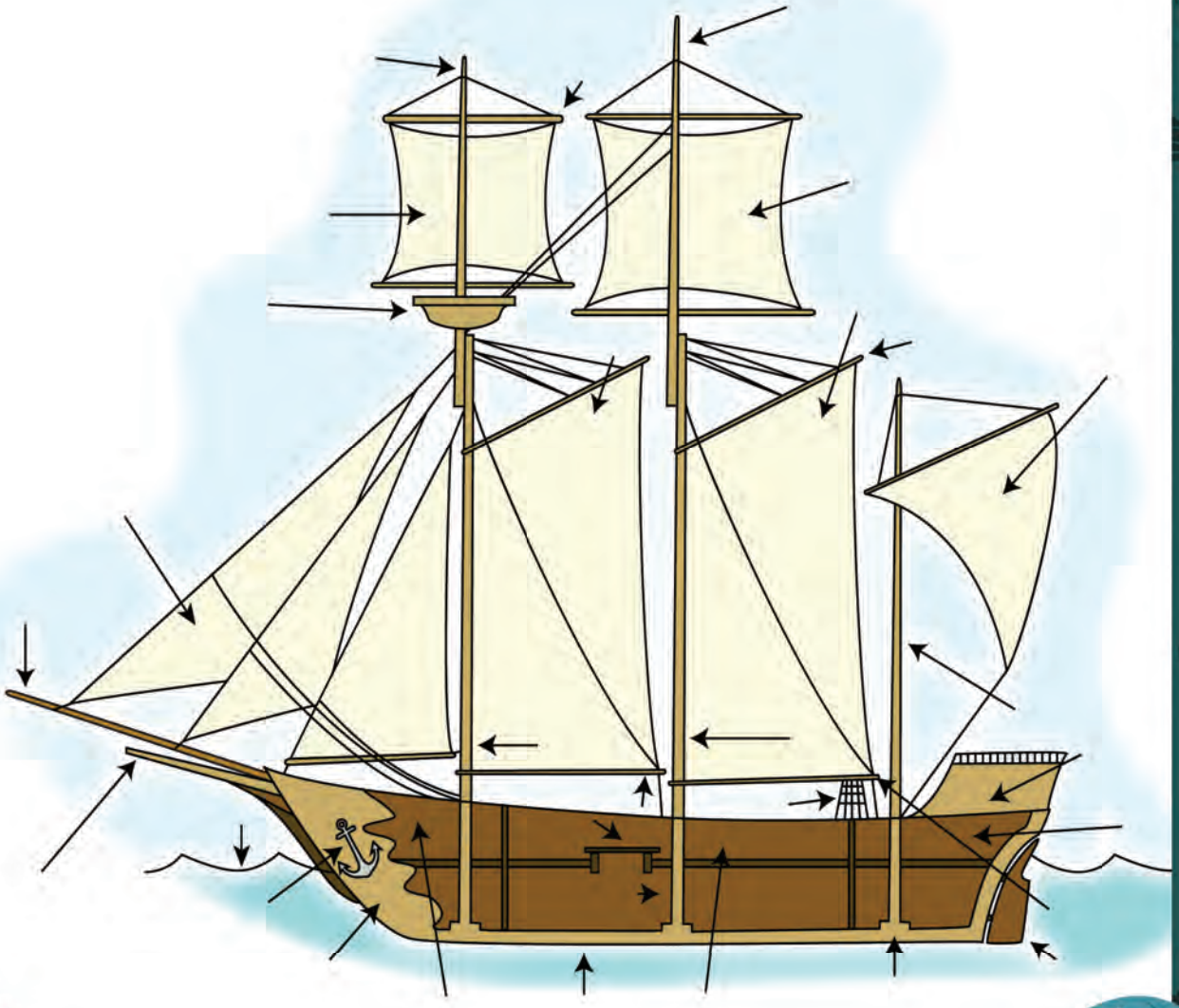


Voyage Date: Today

YOUR VOYAGE ABOARD "The Seafarer"

Crow, you are a new crewman aboard the ship "The Seafarer." Aboard ship, you'll discover ships from the past, and travel back to the far reaches of human history. You'll move forward with mankind as they construct ships, develop trade, and build empires aboard sailing vessels. Then, you'll watch as men take to the air in flying machines built for the skies and even outer space.

But for now, it's time to see how well you know your new ship. Label the parts of the *Seafarer* below. You'll find all the information you need on previous pages in this resource. Label each feature with its name.



The Parts of a Sailing Ship

You've learned a lot already, being aboard the Seafarer.
Which parts of a sailing ship do these jobs?

1. These horizontal poles support the sails: _____
2. This is watertight and keeps moisture out of the ship's bottom: _____
3. These catch the wind to move a ship: _____
4. These are lines or ropes that help support and adjust the sails: _____
5. These sails are triangular in shape: _____
6. A platform from which a crew member can watch for hazards: _____
7. This is the largest sail on a sailing ship: _____
8. This anchors lateen rigging, extending from the ship's front: _____

The Parts of a Powered Ship

Which parts of a powered ship do these jobs?

1. This provides movement of the propeller: _____
2. This controls the direction of a ship by swinging side to side: _____
3. This pushes on the water behind the ship, forcing it forward: _____
4. This has walls that divide the lower decks into compartments: _____

Measure Your Seagoing Skills

A Ship's Motion

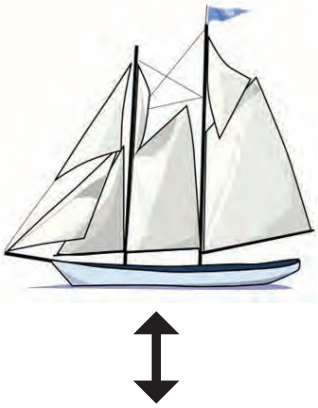
Unfortunately, the ship's motion has made you seasick the entire first week aboard.

Label the motions below as either:

heaving
pitching
swaying
yawing
surging
rolling

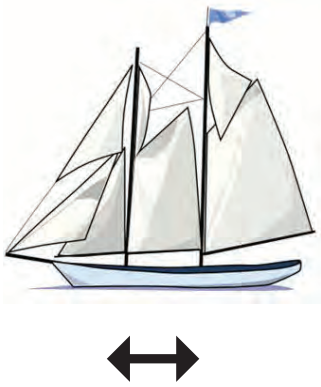
1.

2.



3.

4.



5.

6.

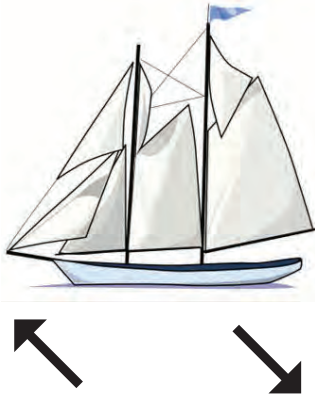


Chart Your Travels

You've made it through your first week, Crow! The first mate has noticed you are a good worker, and wants to meet you. His name is Atlas, since he knows how to get anywhere from anywhere. See him atop the forecastle? Let's go talk to him.

"Hawk, my boy. I see you've got a cabin boy o' your own to order about, now! Well, it looks to me like he needs to learn a bit about this world o' ours. Now, Crow, sit you down here, and I'll tell you about something called geography. See?

"Let's start by supposing a little. If you were a landlubber, and you never left your own yard, you may not need to know much geography, since you could easily see every part o' your world from anywhere you stood. However, as soon as you start wandering this world o' ours, geography becomes very important. You use geography every day when you walk down to the corner ice cream stand, take a ride to a grocery store, take a short trip to your grandpappy's house, or a long sail to the Pacific Islands.

"You see, geography provides us information about our world. What kind o' information? Geography is an understanding o' places, locations, and natural features such as landforms and bodies o' water. Geography involves writing down, mapping, or charting this understanding of places. Geography is a word given to us by the ancient Greeks, for whom "geo" meant *earth*, and "graph" meant *to write*. So geography is writing or telling about the world around each o' us.

"Natural features -- they're a key part o' geography. Natural features include bodies of water such as bays, lakes, streams, oceans, seas, inlets, swamps, and even lagoons fit for pirates! Landforms are also a part of the natural features o' the earth. Landforms can be monument-like mountains, bluffs, cliffs, canyons, arches, or the deepest, darkest caves. But landforms can also be terrain such as deserts, prairies, hills, forests, and beaches.

"These natural features work together to make up the *topography* of Earth, the unique collection o' landforms, terrain, and bodies of water that cover our planet. As you might imagine, your own location on the earth and the topography that surrounds you determines your climate. The climate helps determine the types of societies and natural life that thrive there. Climate is responsible for what kinds of animals live off the land, what types of crops can grow, whether plant life and water is abundant or scarce, and o' course, whether or not you can sail in peace or if you'll run into storms that'll sink you for sure. So, it be my job to teach you a bit about geography, so you'll grow up to be a sailor true."

Where you are really helps to shape the kind of life you live. Below, tell how the place in which you live makes a difference in the life of your family.

ANCIENT SAILORS

ANCIENT SAILORS

You've discovered that Captain Kildare is a true gentleman, a man who loves history. Just this morning, he began talking to you about the first people on the sea.

"You see, Crow, it's like this. Though the world's first recorded civilization was in Mesopotamia, navigation by water in the ancient world took off on the Nile River in Egypt. Egyptian life centered around the Nile; Egyptians depended on its waters for irrigation and transportation, its wildlife for hunting, and the papyrus along its banks for paper and basketmaking.

"In addition, the Egyptians used the mighty Nile to assist them in building huge monuments like the pyramids. Building materials, men, and supplies were taken to sites along its banks on ships built for the Nile's waters. The Egyptians mastered the Nile, then moved out into the world beyond.

"As the glory of the Egyptians faded, their neighbors across the Mediterranean developed a strong trading empire. The Phoenicians had several home ports, and came to dominate trade in the Mediterranean, sailing galleys even to Africa. Amazing, huh?"

DESTINATIONS THIS WEEK

History Port: Travel Back to the Beginning
Egyptians & Phoenicians

Science Port: Exploring the Oceans
Oceanography, Noah's Flood

Culture Port: Coming Aboard the Ship

Geography Port: Forces That Shape Geography

Voyage Date: Today

GET TO KNOW SAILOR LINGO

Crow, you're finally starting to catch on to the lingo we speak around the ship. How much do you know? Let's see.
Write down what is meant by each of the phrases below.

Shake a leg! You've got to weigh anchor!

Finish the bright work to starboard.

Bring a java to me at the scuttlebutt.

Plumb the depths so we don't go aground.

You'll be working Zero Dark Thirty, if you leave your watch early.

Swab the deck and send water down the scupper.

You're a landlubber if you can't see we're in the doldrums.

Sailing Culture

Ranks in the Crew

Crow, you've got to learn right away about who does what around here. I've told you everything I can about the men aboard. Show me what you know by writing below each figure what he does.

The Supercargo

Cabin Boy

Boatswain

Able-Bodied Seaman

Ordinary Seaman

Take a look at these idlers! How were idlers different from the other members of the crew?

Write underneath who is included in this group, from left to right..

Map the World

Early Sea Battles Map

This is your first mapping assignment this year. You'll add to this map for awhile. Right now, label the Tigris and Euphrates Rivers (AWH-18)*.

*The abbreviation "AWH" stands for the "Atlas of World History" we recommend for completing your mapping projects. The number after the dash is the page number on which the information appears.

Ships in Time

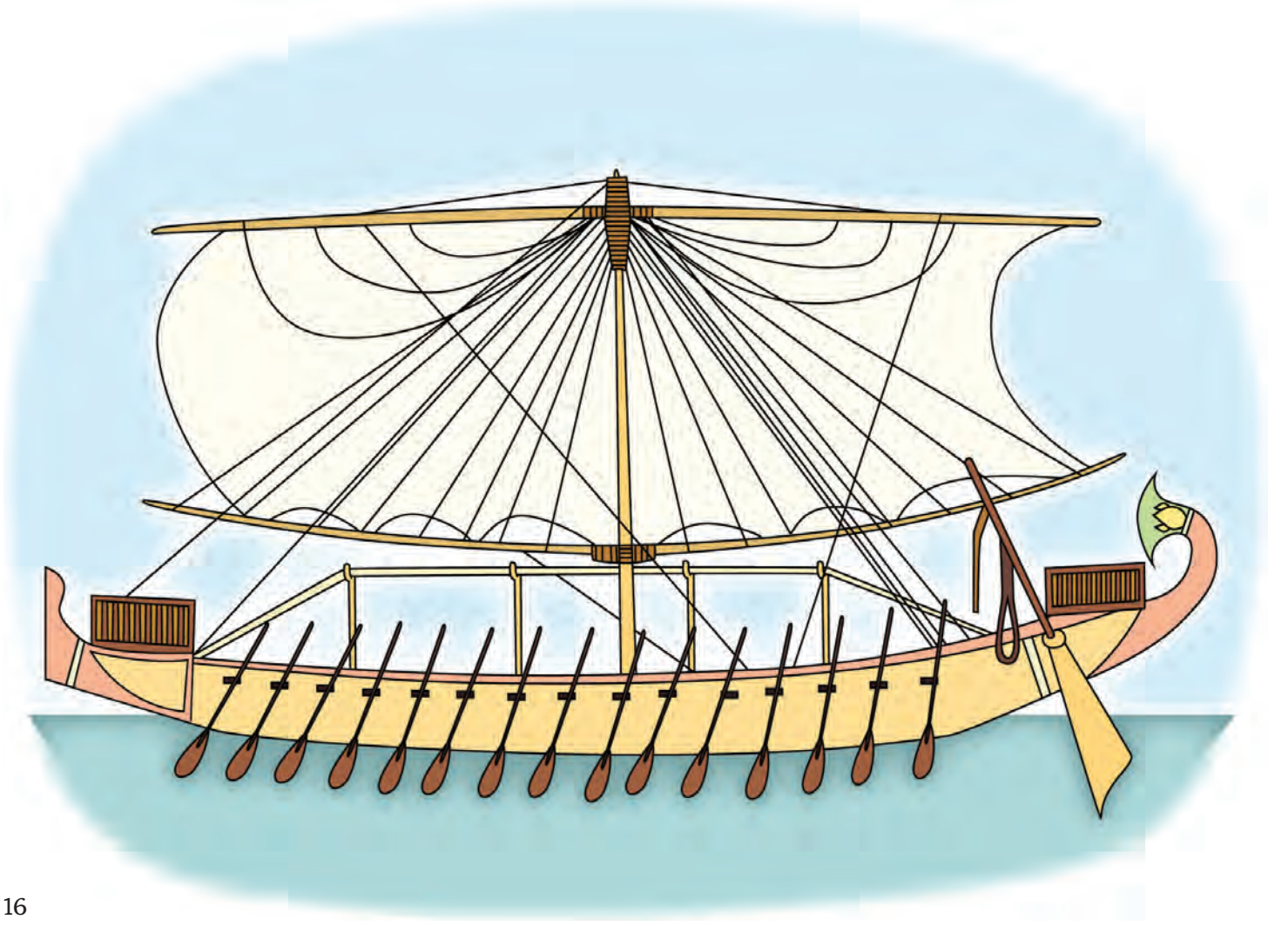
Egyptian Ships (or Reed Boats)

Reed boats are among the oldest types of boats recorded in petroglyphs dating back thousands of years. The ancient Egyptians built boats from papyrus reeds that grew, and were cultivated, along the Nile River and its delta. Papyrus was used not only for boat-building, but for making rigging for boats and paper for writing. Reconstructions of reed boats have proven that they were extremely seaworthy. A talented reed carpenter would have had the skill to build a craft that could stay at sea for months. This supports the idea that Egyptian Pharaohs sent trading boats, and may have linked Egypt with Mesopotamia and even India.

Draw in a few Egyptians on the deck of this ship.

Paste Papyrus Reed from Cut-Outs Section Here

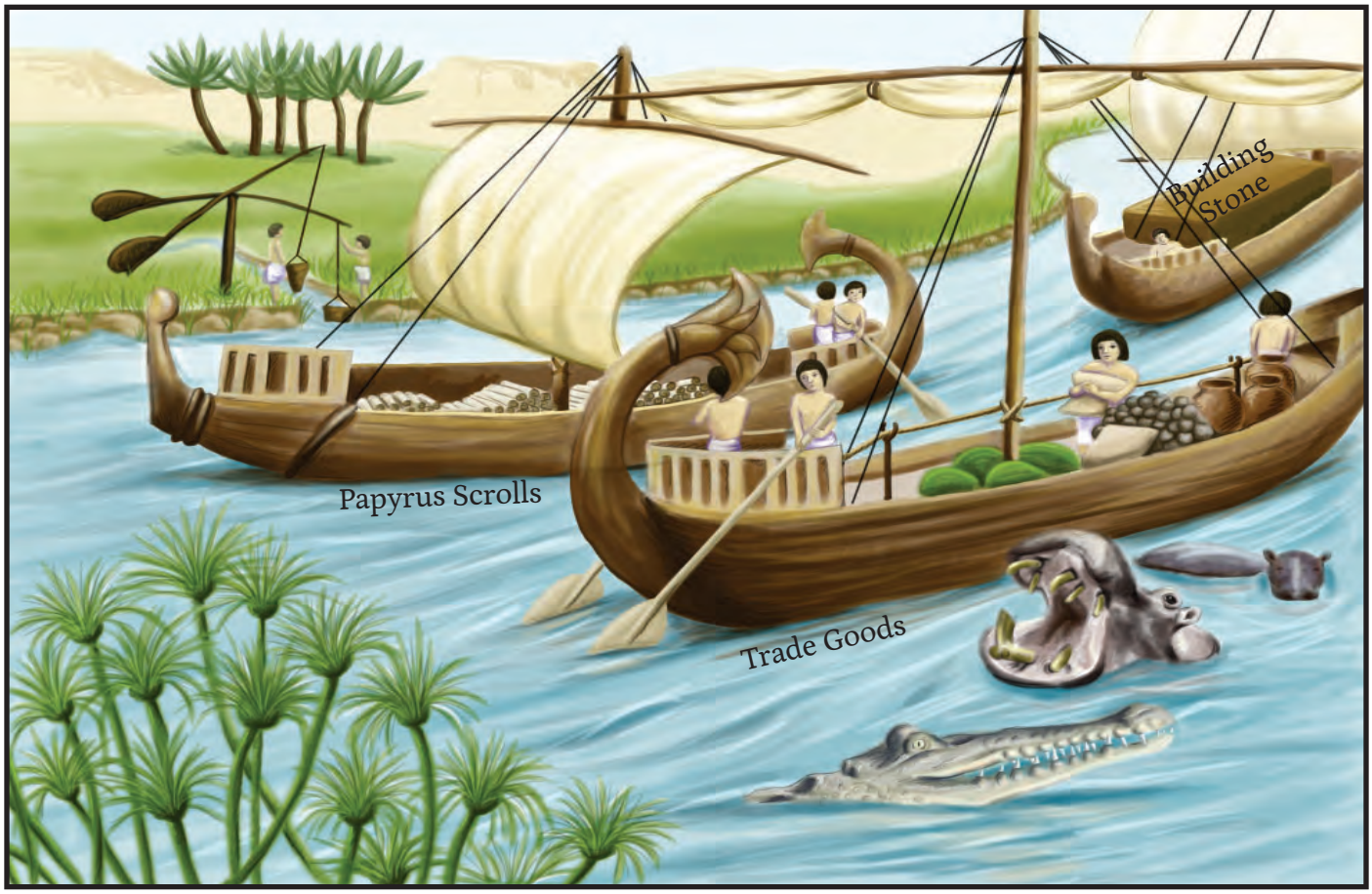
Papyrus reed photographed and provided courtesy of Kurt Stüber.



Measure Your Seagoing Skills

Egyptians Conquer the Nile

Crow, Captain Kildare has been telling you just about everything he knows about life along the Nile. Discuss or add notes to the picture connecting how the goods labeled in the picture connected to aspects of Egyptian life that required the Egyptians to take to the Nile in boats. Then, discuss how other items in the picture affected Egyptian life.



Hatshepsut's Expedition

Record facts about Hatshepsut's fleet.

1. Hatshepsut's fleet set out this long after Sahure's: _____ years
2. Hatshepsut's ships held at least this many men: _____ men
3. Hatshepsut's ships were this long: _____ feet
4. List at least four things brought back to Punt during Hatshepsut's reign:

_____

Chart Your Travels

Atlas saved aside some extra grub from supper tonight to give to you, since you were looking like you lost a lot of weight during your bout with seasickness. A couple of extra potatoes must taste great after a week without eating much.

"Thanks, Atlas," you said. "Hey, can you tell me how our planet got so many natural features, anyway? You know, like you were saying before?"

"Well, my boy, it's like this. Forces that have shaped the geography of our planet include forces that took place a long time ago, such as Noah's Flood, and geologic processes that are still continuing today. The Flood formed great canyons and reshaped continents, and possibly set the continents to moving apart from one another. The Earth's crust is made up of twelve tectonic plates that today move one against another. In the past this movement has uplifted mountains and formed volcanoes. Today plate movement kicks off earthquakes and causes volcanoes to erupt. I've seen it myself, I tell ya true!

"Another force at work on the Earth is weather. Rain, winds, snow, and the formation o' glaciers all leave their marks on the land. Rain can wear away at rocks along stream beds or the peaks o' mountains. It can accumulate fast enough to flood and carve valleys or cause mudslides. Wind can move loose earth or sand, create waves that wash against shoreline cliffs, and even carve down rock into arches and tunnels. Glaciers are formed when years of snow compress into a solid pack o' ice. As they melt and increase, they move slowly down the sides o' mountains. They carry boulders and soil from higher ground to lower elevations, carving valleys and leaving lakes behind them.

"Ancient peoples relied upon the land they lived on. They knew each and every natural landmark intimately. Their lives often depended on this knowledge. First peoples recognized their homelands, but as civilizations grew, what they knew about geography grew, too. They traveled farther and began to make maps. They discovered that maps allowed them to retrace their paths, or let others follow their course. They drew maps on papyrus, wooden or clay tablets, and even cave walls. With the help of maps, people could now travel between growing cities, going beyond places they knew themselves, out into the unknown.

"Today, we continue to go into the unknown in ships. Even poor sailors like you and me, Crow!"

Draw a map of a place you know well, such as your yard, here or on another piece of paper.

Voyage Date: 900 B.C.

THE PHOENICIANS' TRADING GROUNDS

You've learned the Phoenicians were excellent traders and traveled throughout the Mediterranean Sea, trading with other peoples all around the sea. On the map below, begin by labeling the waters and cities or regions the Phoenicians would have known, listed below. Then, paste the trade good squares from the colored pages section in the areas where the Phoenicians traded for it.

Label:				
	Straits of Gibraltar	Aegean Sea	Ionian Sea	Africa
	Mediterranean Sea	Adriatic Sea	Greece	Egypt

Ships in Time

Phoenician Monoreme Galley

Answer the questions below from your reading from "An Unfurling Sail."

How were Phoenician galleys powered?

_____

When were oarsmen required?

_____

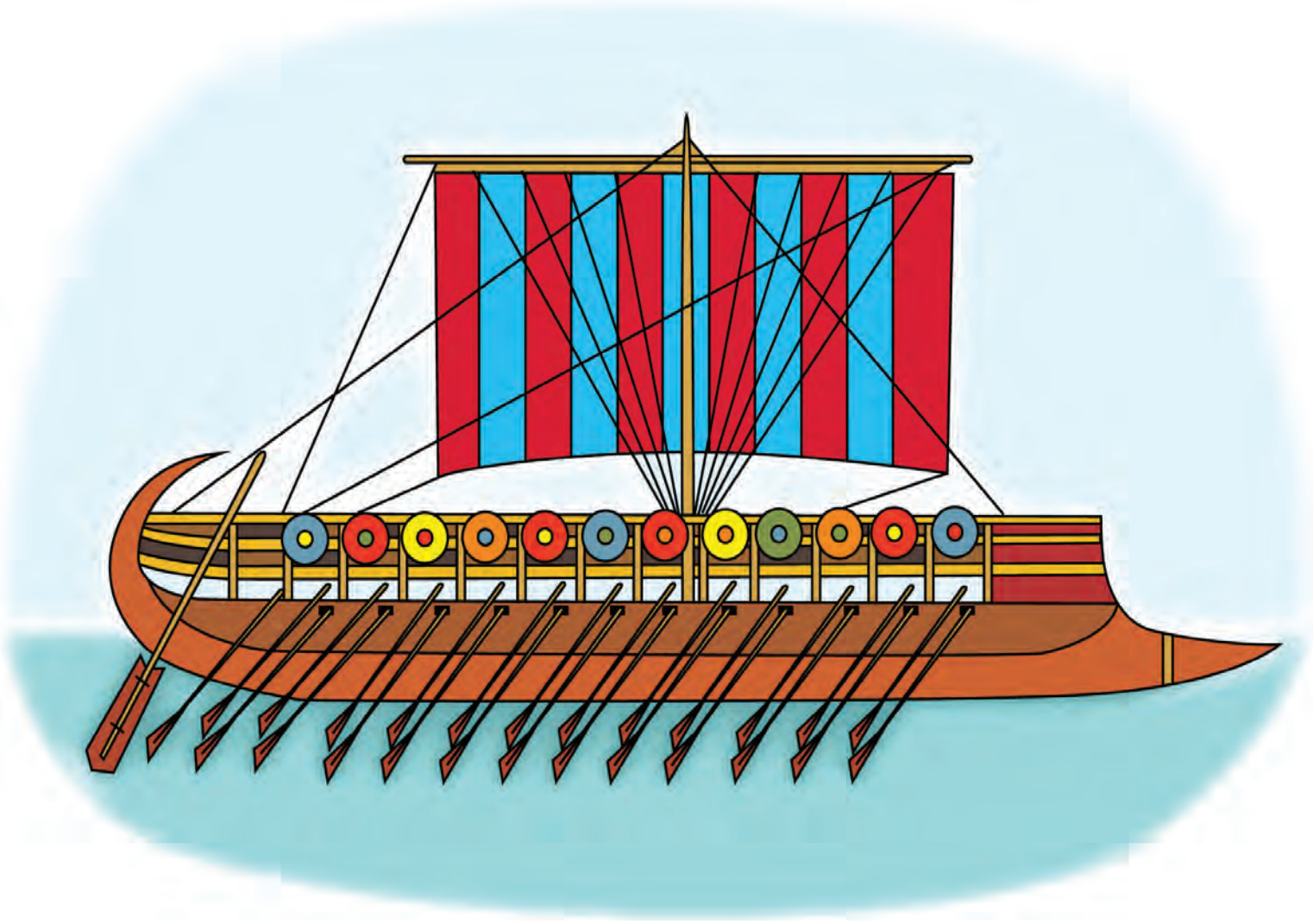
_____

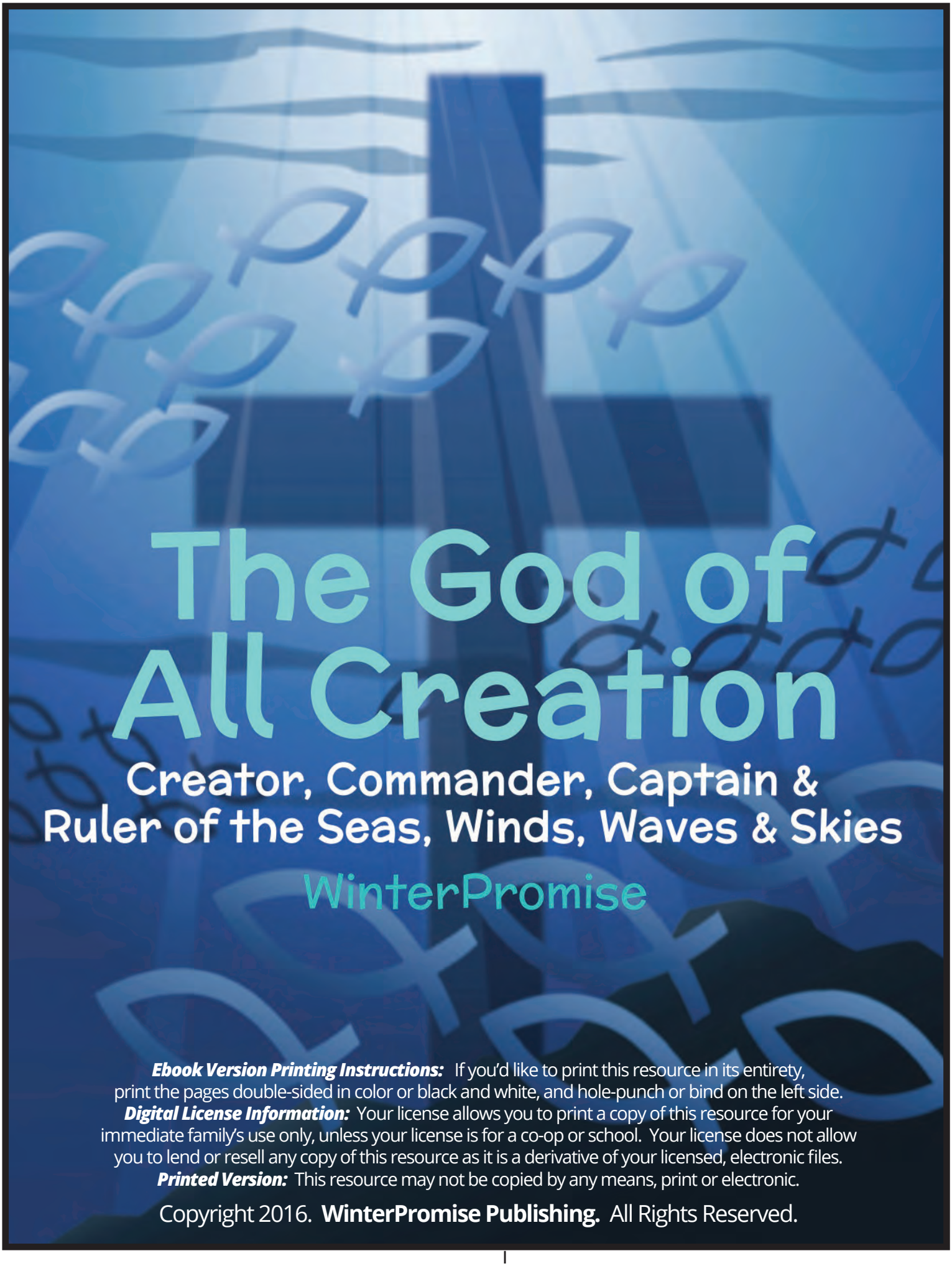
Why did their crews keep the galleys close to shore?

_____

_____

What was the shallowest depth of water in which a galley navigated? _____





The God of All Creation

Creator, Commander, Captain & Ruler of the Seas, Winds, Waves & Skies

WinterPromise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The God of All Creation

WinterPromise

Table of Contents

How to Use This Resource:

This resource can be printed in its entirety, and journaling done on its pages. However, if you are using the digital format, you can choose to have your student view the text and answer any questions or write out Scripture passages in a separate journal or notebook.

Introduction

Following Christ and learning to be His disciple is not about following a bunch of rules or trying to be good enough to reach God's standard. Instead, it is a vibrant relationship with God himself. Like any relationship there are certain things that make a relationship grow. This study is concerned with the things that will help your relationship with God grow.

In the Bible there are specific practices that should be part of a believer's life. These are called spiritual disciplines. Some of these practices, like prayer, are taken directly from the life of Jesus Christ. Other disciplines are directly taught in the Scriptures, such as meditation. Finally, some disciplines are applications of principles lived out by Christ. This would include sacrifice.

It is important to remember that spiritual disciplines do not make you more righteous or better than others. The purpose of the disciplines is to grow your love, devotion, and service to God. It is important to remember that when Jesus was asked what the greatest commandment was, he answered that it was to love the Lord your God with all your heart, soul, mind, and strength. The purpose of this book is to increase your love for God.

THE DISCIPLINES:

The following is a listing of the disciplines that you will be regularly practicing during this study. A description is given of each one.

Memorization
Memorizing is one way to "hide God's word in your heart." Each scheduled day you will be reading aloud a particular passage. Reading the passage aloud each day will help you memorize the passage. During this study you will memorize nine different passages.

Meditation
Mediation describes thinking about something. God's people have been meditating on him and His word since earliest of times. In this study your meditation will be prompted by questions or related thoughts as you dwell upon the passage of the week.

Prayer
Prayer is talking with God. This is an important part of every Christian's life. Can you imagine having a relationship with your friend and never talking to them? It wouldn't be much of a friendship would it? In this study you will be talking to God about the week's passage. Oftentimes you will be praying for someone in particular.

Study
Studying the Bible is very important because you need to know what it teaches. The Bible commands it and living in the world demands it. Knowing what the Bible teaches will help you in every area of your life. During this study you will be answering questions and looking up related verses. This will help you better understand the teaching of the whole passage.

Journaling
In Deuteronomy 17:18, Moses looks toward a time when the Israelite nation will have a king. This passage notes that one thing the future king should do is to write his own copy of the law. This practice would spiritually benefit the king, his children, and the nation. In this tradition, we are having you write out God's word for your own spiritual benefit. You will do this in the Journaling sections.

In this study, journaling refers to both writing God's Word and writing your thoughts about the passage or the application of the passage to your lives.

Journaling your thoughts about God and the Bible can be a lot like prayer. Many believers write their prayers and thoughts in their journal. Journaling can also be a lot like meditation. Writing down your thoughts is a good way for you to grow in your understanding of God and His word.

Sacrifice
This practice is based upon the life pattern of Jesus. It means to give something up for another. You must remember that sacrificing is not intentionally causing yourself to suffer for the sake of being uncomfortable. Sacrifice is giving something up that will benefit another person without regard to their receptivity. Sacrifice in this study is simply putting another's needs above your own.

Solitude
This is the practice of setting aside time to be alone and without distraction. Life is very busy and there are a lot of things that distract your attention from God. Practicing Solitude will give you the opportunity to focus your attention upon God and His word. Be sure to get your parent's permission and direction before you practice solitude.

Sharing
Telling others about Christ and God's grace is central to the life of all who know him. This study will give you opportunity to tell others about God's grace.

Developing these disciplines in your life now will help you use them all your life to draw near God. Are you ready for this journey with the Creator of the sea and sky?

Unit 1
God, the Creator of All
✡
Introductory Lesson
Lesson #1
Genesis 1

You are about to begin reading the most important story ever recorded. This story is God's story. It begins with God's choice to create the sea and sky and everything else.

You will read how God placed the first man and woman in a garden located in a place called Eden. It was paradise and God, in the Person of Jesus Christ, visited and talked with the first couple during the daytime in the garden.

But paradise was soon lost when the first couple disobeyed and rebelled against God. But let's not get ahead of ourselves. You will read more about that in the next lesson. Today you will read about God, the Creator of all things. And "all things" includes you. The Bible teaches that teaches that you were created in His image and that makes you special.

Even though you are a special creation of God, you may not always feel that way. Instead, you may feel just the opposite. Do you ever feel unimportant or overlooked? Do you feel small, especially when you think about God? Feeling small and unimportant are two feelings that often go together.

The next time you feel small or unimportant remember that you are a special creation of God. Sometimes big things can make us feel very small. In the spaces below, or in your journal, make a list of six things God created that are very big!

_____ _____ _____

_____ _____ _____

Read Genesis 1:1-25 and list three big things God created mentioned in the text.

_____ _____ _____

The God of All Creation

Read Genesis 1:26-31 and answer the questions below or in a journal.

1. In whose image was humanity created?

_____

2. Who did God put in charge over the fish, birds and beasts? (v.26)

_____

This chapter teaches us some very important things about being small in a very big world. Share the lessons below with a parent.

A. God created you in His image. This means that God created you with special purposes and abilities. Being created in the image of God is what makes you and everyone else you know important.

B. God created you with a purpose. God put His human creation in charge of the fish, birds and beasts. God gave humanity dominion over all His creation. This teaches us that God has a plan and a purpose for you. In the coming weeks you will learn more about God's plan and purposes which are accomplished through Jesus Christ.

C. Whenever you feel small or afraid or unimportant you can turn to God the Creator of all things. God doesn't promise that things will be easy or trouble-free. But God is good and He will help you. He is big enough to take care of you!

Isaiah 40:21-31 - Journal
Lesson #2

In this passage you will discover that
the Creator of the seas and skies is the Supreme Ruler over all things!

Isaiah 40 presents an awesome picture of God's power and rule over all the earth. He is the God who created all things and is ruler over all peoples. The text says that God sits enthroned upon the circle of the earth and the inhabitants are like grasshoppers. Now that is big!

This chapter was written to the Israelite people who were afraid of everything around them. And they had reason to be afraid! Nations bigger and stronger than they were out to expand their boundaries and the tiny Israelite nation was in the way. So God sent His people a prophet named Isaiah to remind them that their God was King over all nations. Most of the Israelites refused to listen, but in Isaiah 40 the prophet speaks words of comfort to His frightened people.

In the space provided below or in a journal, write out Isaiah 40:21-24.

How do these verses give you confidence that God can help you?

Isaiah 40:21-31 - Prayer
Lesson #3

Read Isaiah 40:21-31 aloud. You'll do this each day, so you can memorize this passage in about four weeks.

Prayer is talking to God. As you read this passage aloud, write down one thing that you can talk to God about from verses 21-24. For example, you can pray for God's will to be done in a particular nation. If you are concerned about America, you can pray for America, or any other country of interest to you.

Write your prayer below or in your journal:

Isaiah 40:21-31 - Journal
Lesson #4

Read Isaiah 40:21-31 aloud.

In Isaiah 40:25 God asks if there is anyone like Him. The intended answer is that no one is like God. In verse 26, God is described as the Creator. The creation itself demonstrates that no one is like God or is His equal in power and might.

Write Isaiah 40:25-26 in the space below or in your journal.

Look at Isaiah 40:25-26. What did God create? Who else can do that?

How does God's power make you feel about the challenges and situations you face?

Isaiah 40:21-31 - Meditation
Lesson #5

Read Isaiah 40:21-31 aloud.

After you read Isaiah 40:21-31 take five minutes to think about the passage. Write down any thoughts that you will want to remember or questions that you may have below or in your journal.

Isaiah 40:21-31 - Share
Lesson #6

Read Isaiah 40:21-31 aloud.

God wants you to tell other people about Him. When you learn something from the Bible it is good to share what you have learned. Choose one verse to share with a friend or family member. Write this verse below or in your journal.

Then it is time to share! Here's what to do:

1. Quote or read the verse to a friend or family member
2. Tell them what that verse teaches you about God
3. Tell them how this verse helps you