

# **Slimy, Grimy & Scummy No More**



**Conservation Science  
Ways to Reduce, Reuse, Recycle & Rethink  
WinterPromise**

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# **SLIMY, GRIMY, & SCUMMY NO MORE! SCIENCE FOR 7TH TO 9TH GRADE**



## **Welcome to Conservation Science!**

Your student this year will be study a lot of different topics related to conservation science. They'll investigate renewable resources, such as solar power, light, steam, and wind power. They'll also take a look at how conservation science can affect their daily lives, and how to be good stewards of the good gifts God has given us in the earth He created. Each week your student will work through several resources. These resources can be completed orally together with the parent, or can be done independently if the student is older and accustomed to working on their own, though he will need parental supervision for some of the activities.

This study focuses a lot on active learning -- first through the two kits, and then through the conservation journal that shares facts about living sustainably. These activities are intrinsic to successful completion of this science program. Many of the activities are very simple to complete and require limited supplies beyond the kit. Any needed supplies beyond common items such as art supplies or household supplies are listed underneath the scheduled activity.

This program has been deliberately designed to be a program whose content is a good complement to the breadth of our themed programs for junior high students.

### **Resource List:**

Slimy, Grimy, & Scummy No More! Conservation Science Program Guide

Conservation Student Worktext

Planet Earth

Garbage

Clean Water Science Kit

Solar Science Kit

### **Staying Safe with the Kits:**

You MUST read all safety notes in the front of the kit booklets. It is vital that you, the parent, read these safety warnings and imperative that you share them with your junior high student. Your student will be working with a solar oven and focusing sunlight. These require parental supervision and an understanding of what is safe to do, and what is not.

# SUPPLIES NEEDED FOR ACTIVITIES

## Important Notes Before You Begin:

- The house parts, being made of styrofoam, need to be glued together with the included wood glue, or another type of wood glue ONLY! Other types of glue might destroy the styrofoam.
- Keep the small wires together with a rubber band so you don't lose them.
- When you unpack the solar cells, do not throw away the three pieces of bubble wrap, as you need these pieces for later experiments.
- Several kit components are used for more than one experiment, so keep everything.

### Supplies We Expect You Have Easily Available:

paper	adhesive tape	light cardboard	large metal or glass bowl
pens/pencils	packing tape	kitchen towel	clear plastic kitchen wrap
ruler	a coffee mug	glass bowls/jars/containers	measuring cups & spoons
string	a sharp knife	a weight scale	miscellaneous kitchen utensils
water	hammer	permanent markers	aluminum foil
sugar & salt	masking tape	rubber bands	crackers and cheese
raw egg	ziplock baggie	an old sheet	2-quart glass container w/ lid

### Other Supplies Used for the Study You may NOT have on hand:

Underlined weeks are those that require additional supplies to complete KIT activities.

Week 2 - 4 - 2-bottles, small nail, empty film canisters, fruit (like bananas), small margarine lid

Week 3 - yeast

Week 5 - 3 large plastic tubs

Week 9 - blue food coloring, Brillo pads, vegetable oil, cocoa powder, cotton balls, tweezers, feathers, dishwashing detergent

Week 12 - old broken crayons, cupcake tin, cupcake or muffin liners

Week 14 - 2 Pringles-type cans or large soup cans, gravel and stones, magnifying glass and clear, double-sided tape

Week 15 - 2 outdoor thermometers

Week 20 - a funnel-shaped collector, such as a kitchen funnel

Week 24 - an oven thermometer

Week 27 - an outdoor thermometer

Week 29 - one small and one larger plastic drinks bottle (disposable), 4-6 tea bags

Week 34 - a 60-watt incandescent light bulb and a 13-watt CFL light bulb, a thermometer, and a lamp

# **SLIMY, GRIMY, & SCUMMY NO MORE!**

## **Weekly Overview of Topics**

### **OUR PLANET**

- Week 1: Our One Perfect Spot in Space
- Week 2: Life on Our Planet
- Week 3: Problems Our Planet Faces

### **LAND POLLUTION IS ALL AROUND**

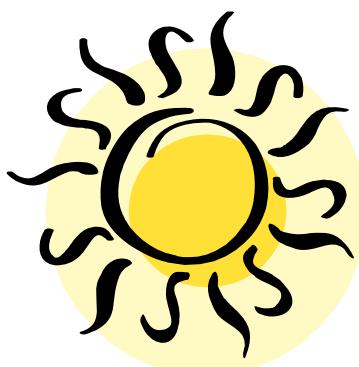
- Week 4: What's Pollution?
- Week 5: Toss It and Forget It?
- Week 6: That's Rubbish! A History of Trash!
- Week 7: Where's All That Trash?
- Week 8: Landfills Provide Energy
- Week 9: Hazardous Wastes

### **OVERCOMING LAND POLLUTION**

- Week 10: Ways to Reduce What We Use
- Week 11: Reuse Again and Again!
- Week 12: Recycling is a Key Answer
- Week 13: Other Ways to Make a Difference

### **TAKING CARE OF THE AIR**

- Week 14: Air and Atmosphere Basics
- Week 15: What About Global Warming?
- Week 16: Ozone Depletion
- Week 17: Wind Power



### **MANAGING OUR WATER RESOURCES**

- Week 18: Water Sources
- Week 19: Water Pollution
- Week 20: Ways We Use Water
- Week 21: Ways We Clean Water
- Week 22: Choices to Save & Use Water

### **WHAT ABOUT THERMAL ENERGY?**

- Week 23: Introducing Energy
- Week 24: Understanding Solar Energy
- Week 25: Converting Sunshine to Energy
- Week 26: What Else Can the Sun Do?
- Week 27: Capturing Thermal Energy
- Week 28: Heating & Cooling Your Home
- Week 29: Ways to Save at Home

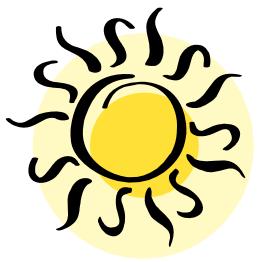
### **RETHINKING OUR CHOICES**

- Week 30: Let's Start to Rethink
- Week 31: Where Does Your Food Come From?
- Week 32: Rethinking Food Choices
- Week 33: Ways to Save Energy
- Week 34: More Ways to Save Energy
- Week 35: Rethinking Chemical Use
- Week 36: Conservation Science Review



### **COMPLETE WITH PARENTAL OVERSIGHT ONLY**

You will find this symbol next to some experiments this year. We feel these need parental oversight, as you are working with high heat in your solar oven, etc.



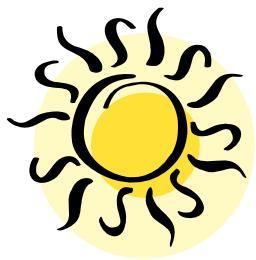
# Slimy, Grimy & Scummy - Week 1

## Our One Perfect Spot in Space

ONE-DAY SCHEDULE - Complete All

TWO-DAY SCHEDULE - Divide as Shown

<b>DAY 1</b>	<b>DAY 2</b>
<p style="text-align: center;"><b>READ:</b></p> <p><b><u>Planet Earth</u></b></p> <p>Read "Introduction" - Pages 1-4 Read "Earth: Our Spot in Space" - Pages 5-7</p>	<p style="text-align: center;"><b>READ &amp; COMPLETE:</b></p> <p><b><u>Conservation Worktext</u></b></p> <p>Read "Conservation &amp; the Christian" Pages 4-6 Complete "Summarize What You Learned" Page 7</p> <p><b>NOTE:</b> Each week you'll complete worksheets in your Conservation Worktext.</p>
<p style="text-align: center;"><b>YOUR CHOICE OF ACTIVITIES:</b></p> <p><b><u>Learn More About the Water Cycle</u></b></p> <p>Visit This Website: <a href="http://www.epa.gov/ogwdw/kids/flash/flash_water_cycle.html">http://www.epa.gov/ogwdw/kids/flash/flash_water_cycle.html</a></p> <p>Supplies: None.</p>	<p style="text-align: center;"><b>FEATURED EXPERIMENT:</b></p> <p><b><u>Watch the Water Cycle</u></b></p> <p>You can create your own water cycle.</p> <p>Supplies: A large metal or plastic bowl, a sheet of clear plastic wrap, a dry ceramic mug (like a coffee mug), a long piece of string, and water.</p> <p>Fill the bowl about 1/4 full of water, and place it in a sunny place outside. Put the mug in the center of the bowl, without getting any water in it. Cover the top of the bowl tightly with the plastic wrap, tying string around the bowl to hold the wrap in place. Watch the bowl to see what happens.</p> <p>Observe the bowl, and summarize to a parent how this demonstrates the elements of the water cycle.</p>



# Slimy, Grimy & Scummy - Week 2

## Life on Our Planet

ONE-DAY SCHEDULE - Complete All

TWO-DAY SCHEDULE - Divide as Shown

DAY 1	DAY 2
<p><b>READ:</b></p> <p><b><u>Planet Earth</u></b></p> <p>Read "Know Your Biomes" - Pages 8-11</p>	<p><b>READ:</b></p> <p><b><u>Planet Earth</u></b></p> <p>Read "Life on Earth" - Pages 47-52</p> <p>Parent Note: Take a look at the information in the "Adaptation" section on page 52. Discuss this section with your student.</p>
<p><b><i>YOUR CHOICE OF ACTIVITIES:</i></b></p> <p><b><u>Brush Up on Classification of Living Things</u></b></p> <p>Visit This Website: <a href="http://www.kidzone.ws/animals/scientific.htm">http://www.kidzone.ws/animals/scientific.htm</a></p> <p>You can memorize the sequence of classification categories with the sentence included on this webpage. This page includes simple information, but different information than that included in tomorrow's reading.</p> <p>Supplies: None.</p>	<p><b><i>FEATURED EXPERIMENT:</i></b></p> <p><b><u>Make Your Own Mini Food Chain</u></b></p> <p>PLANET EARTH - Page 54-55</p> <p>Create a food chain and watch your own predator and prey.</p> <p>Supplies: 4 - 2 liter bottles, sharp knife, small nail, hammer, large nail, wide tape, empty film canisters, fruit (like bananas), small plastic lid from a margarine container, spiders, and soil, twigs, or small plants from your yard.</p>

# Conservation Worktext



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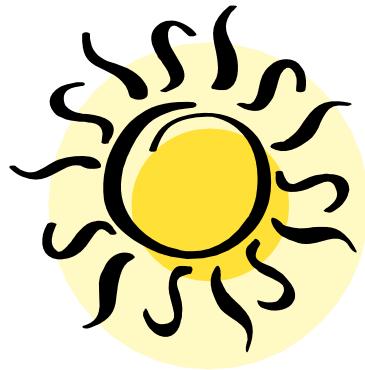
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# CONSERVATION

Student Worktext





## Sizzle, Solve & Survive

# Conservation & the Christian

## Conservatism and the Christian Worldview

How should a Christian think about and prioritize conservationism? The answer is not a simple one, for much of the current "Green" movement is based upon an evolutionary worldview and a universe without God. As such, many of the viewpoints embraced by this movement, many of the philosophies accepted by its followers, and many of the action hot buttons put forward by its leadership are in conflict with a Christian worldview.

However, the idea of conservationism certainly is not.

This course approaches the conservation movement from the perspective of biblical stewardship, creation science and a Christian worldview based on biblical theology. When conservation is considered from this vantage point, it is evident that Christians should be very concerned about conservation and renewability in an effort to take care of the home God created for us. In Genesis chapters 1 and 2, the Bible records God's command to Adam (as representative of the human race) to care for the garden and the earth.

God blessed them and said to them, "Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish of the sea and the birds of the air and over every living creature that moves on the ground." Then God said, "I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food. And to all the beasts of the earth and all the birds of the air and all the creatures that move on the ground -- everything that has the breath of life in it -- I give every green plant for food."

*Genesis 1:28-30*



*Genesis 2:15*

The Lord God took the man and put him in the Garden of Eden to work it and take care of it.

As a result of the fall, the consequences of sin compromised the very environment into which man was placed. Sin forever changed the relationship between man and his world. Adam's work was now characterized by toil, thistle and thorns, rather than the harmonious productivity originally intended. Thus, from a Christian worldview, this conflict between man's needs and the cooperation and well-being of the environment is at the root of the environmental challenges we face today.

By contrast, secular environmentalists see humanity and the environment as an extension of evolution and chance. In addition, many of those in this movement are influenced by various beliefs that elevate the environment and hold to an almost mystical relationship of man to the earth.

So, how do we approach conservationism without embracing all the philosophies and ideas of secular environmentalists? We must prioritize our stewardship of the earth, as commanded by God, and direct our activities accordingly. We must also recognize that stewardship of the earth is not our highest priority, since Christ gave us the mandate to go into the world, preaching the gospel. This command, this most central priority of God's redemptive history, must come ahead of all other concerns. Nevertheless, while we pursue this driving goal, we can still be mindful of our role as God's stewards of our home on earth.



So then, as Christians, we are likely to agree with some of the basics of the environmental challenges that face our world today. These basics include:

- The earth itself offers us various natural and energy resources.
- The natural system is, to a large extent, able to keep itself in balance in an ecological sense.
- Man's societies, in some instances, negatively affects the environment, i.e. pollution, animal extinction.
- Man's activities may, at times, upset the natural balance of our environment, i.e. overfishing.
- Activities of man have led to the extinction or endangerment of various plant and animal species.
- In the past 100-150 years, man has become increasingly dependent upon nonrenewable fossil fuels.
- In the past 50 years, especially since the introduction of plastic and other packaging, our society has continued to become increasingly a consumer market -- consuming one-time-use products that needlessly end up as trash.
- Fossil fuels, other fuels, and fuel by-products appear to have a negative effect on our ecosystems.

These challenges, however, have some promising solutions. New packaging options, the ability to recycle, new fuels, and use of natural energy resources all offer us new ways to care for God's earth.

As you look into conservationism, you will need to be discerning, as you will encounter a variety of positions and mandates put forward by secular environmentalists, which may or may not be consistent with a Christian worldview. We want to help you think through which beliefs or environmental action plans are derived from an evolutionary worldview. Beliefs that are clearly derived from an evolutionary worldview include:

- That all species are equal, and therefore equally valuable, especially as compared to man, who is seen as just a "higher" or "more advanced" species as compared to animals.
- That, since all species are equal, man's priorities must not be considered of greater value than the needs of plant and animal species.
- That the health of the planet is our most pressing concern, as it must continue to support life for an infinite number of years into the future.

These beliefs, because of the evolutionary worldview, are often taken to extremes. After all, for those who believe that the earth is the supporter of life, there really can be no other priority. However, a Christian does not see the earth as the supporter of life, but God as both the Creator and the one who holds all things together (Colossians 1:13-17). Furthermore, a Christian believes what God has said about creating a new heaven and a new earth (Isaiah 65:17) as part of his redemptive plan. This helps us to keep environmental concerns in perspective as stewardship, rather than long-term survival.



As you go forward with this study, think through all the things you hear about the state of the environment. Hold it up against your beliefs as a Christian and be discerning. What makes sense as a part of reasonable stewardship -- both stewardship of the earth's resources and those God has given you personally? This is what you are going to be learning about, and what we hope you'll take action on!

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**NOTE:** As a side note, many secular environmentalists also believe that global warming is an established fact, and that it is threatening the well-being of the planet on a global level. Most creation scientists see global warming as a part of a cycle, rather than a coming cataclysm. We have steered clear of tackling this issue directly, as there is a lot of conflicting information out there, and a wealth of biased information. Instead, we have sought to focus on the issues that have clear cause and effect on our environment, and in which we can personally make a difference with our everyday choices.



## Sizzle, Solve & Survive

### Summarize What You Learned

**Answer these questions. They are taken from what you just read.**

1. This course approaches the conservation movement from what three perspectives?

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2. What compromised the environment in which man was living? \_\_\_\_\_

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3. From a Christian worldview, what is at the root of the environmental challenges we face today?

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4. What must we prioritize to keep from embracing the philosophies of secular environmentalists?

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5. What is our highest priority as Christians?

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6. On what kinds of fuels has man become increasingly dependent in the last 100-150 years?

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7. Name one belief that many secular environmentalists hold to that is in conflict with a Christian worldview.

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8. What does a secular environmentalist see as the supporter of life? \_\_\_\_\_

9. What does a Christian know to be the supporter of life? \_\_\_\_\_