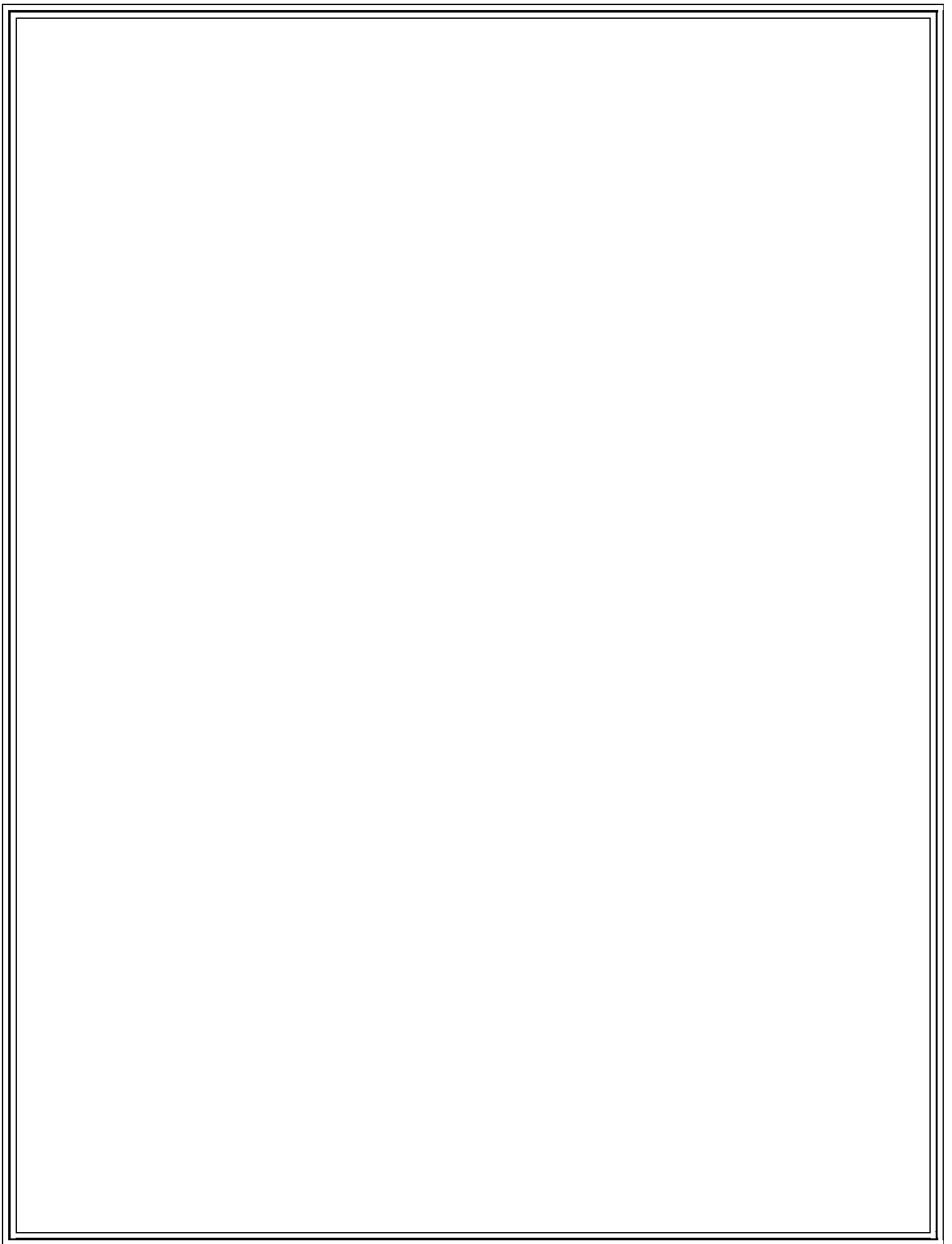


# On the Earth and In It



~A Guided Study by Lisa Kelly~



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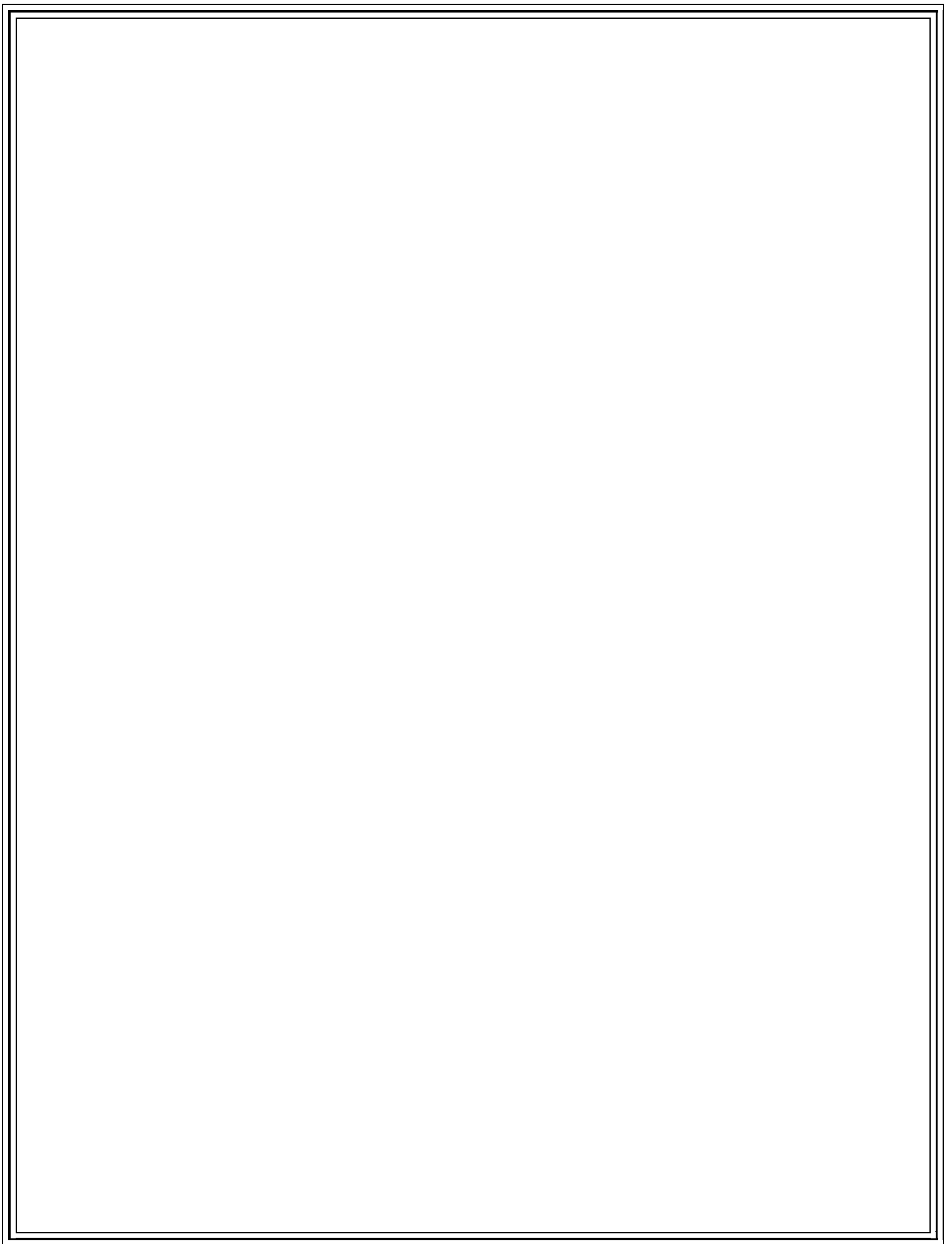
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## Book List

*Rocks, Rivers and the Changing Earth: A First Book about Geology* by Herman Schneider

*Letting Swift River Go* by Jane Yolen

*Volcanoes* by Seymour Simon

## Optional Book List

*Digging for Bird Dinosaurs: An Expedition to Madagascar* by Nic Bishop [Scientists in the Field series]

*Life on Surtsey: Iceland's Upstart Island* by Loree Griffin Burns [Scientists in the Field series]

*Rocks, Fossils & Arrowheads* by Laura Evert

*The First Book of Stones* by M. B. Cormack

*Earthquakes* by Seymour Simon

*A Drop of Water: A Book of Science and Wonder* by Walter Wick

*Birth of an Island* by Millicent E. Selsam

*Mary Anning's Curiosity* by Monica Kulling White

*Hoover Dam* by Elizabeth Mann

## Optional Resources

Consider purchasing rock kits and/or gemstone kits.

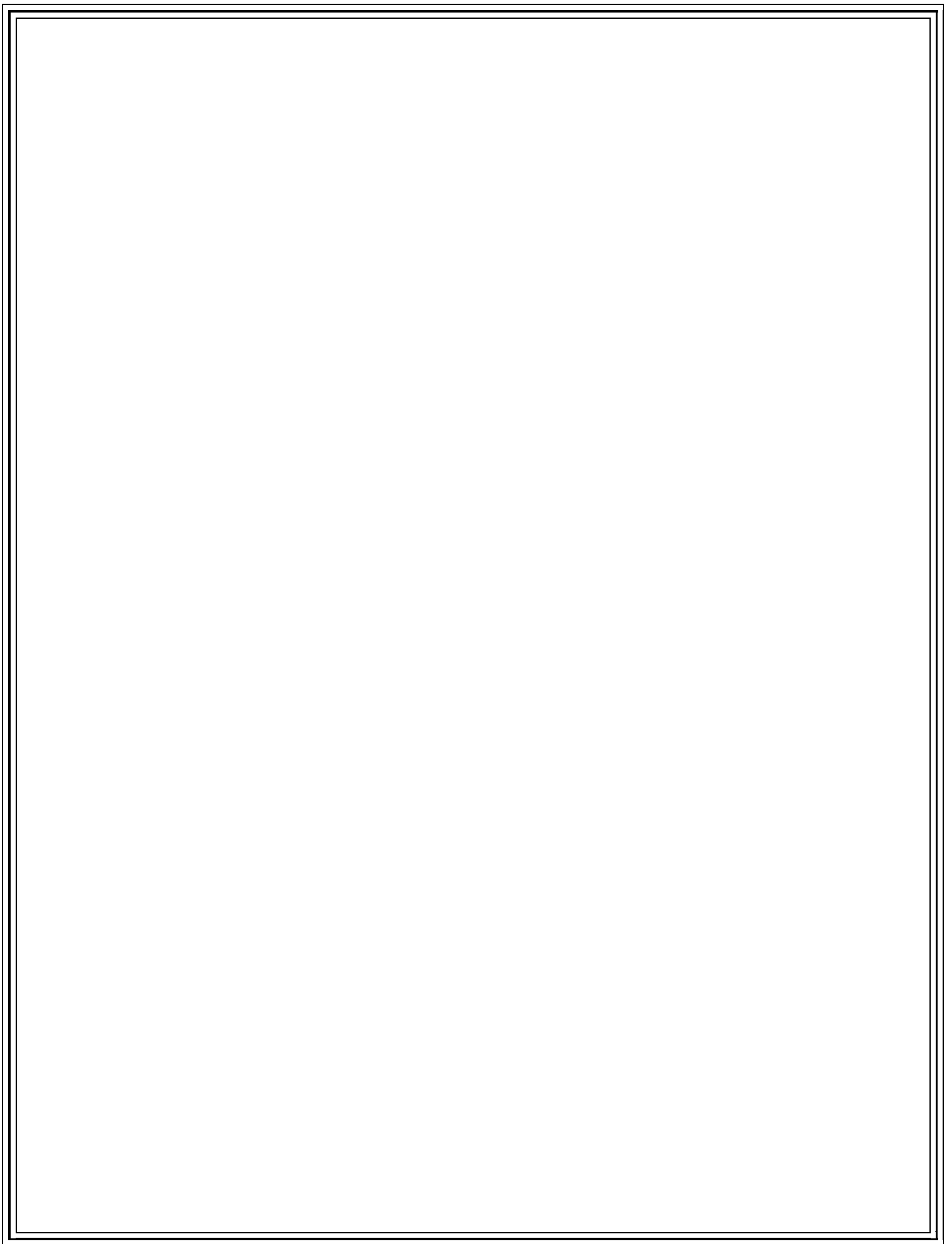
*Rocks and Minerals* [Dover Coloring Book] by T. D. Burns

## Online Resources

For Links Below, See *A Mind in the Light* –Resources: Nature Study & Science: *On the Earth and In It*

Several Study Jams! videos: The Rock Cycle, Volcanoes and Earthquakes

*Crystals & Gems* -a free DK Eyewitness book at Internet Archive



# Supplies

It would probably be very helpful to gather these items and place them in a tub or box. This way everything is all together in one place.

- modeling clay, Play-Doh or salt-dough –see recipe for the latter in the appendix
- sponge
- plate [sometimes a platter or cookie sheet might work better]
- large piece of wax paper
- cup
- pitcher
- piece of cardboard folded like a long U
- rough sand -such as used by builders and bricklayers [has little pebbles in it]
- basin, sink or conduct outside
- a few cupfuls of soil [contains sand and pebbles]
- a glass jar with a screw cover/lid [mason jars, empty, clean pasta sauce jars, etc.]
- large jar or glass baking dish [a fish bowl or small aquarium would be ideal]
- spoon
- tin can with top and bottom removed [or PVC pipe to size of tin can]
- work gloves [especially if using a tin can with sharp edges]
- clean, dry drinking glass
- sheet of cardboard, slightly bent [see illustration in book -p.51]
- a heaping teaspoon of salt
- dark wide bowl or dish with some edge to it
- 6 ice cubes
- 2 small flat plates of the same size
- 4 heavy books
- 2 small bottles with screw-top lids
- package of whole dried beans
- garden soil -should contain grains of sand and small pebbles
- empty tin can with a top
- handful of large pebbles
- sheet of dark paper or cloth
- baking dish
- sand enough to half fill the baking dish [above]

## Basic Household Items

- water, pencils, crayons, paper, scissor and colored pencils

## Optional Supplies

- 10 large pebbles
- broiler tray or flat pan
- access to broiler oven
- large orange with thick skin [have an extra orange or two on hand, in case mistakes are made]
- safe kitchen knife [adult supervision as needed]
- cutting board/cookie sheet
- masking tape [to replace crayon mark, if needed]
- bag of Starburst Fruit Chews, assorted flavors -size/amount depends on number of students [each student needs 9-10 candies [it is important that there are different flavors/colors]
- microwaveable plate
- baking or parchment paper
- microwave or toaster oven
- 2 resealable plastic storage bag [Ziplocs] per student



# Teaching Notes

This guide is designed to accompany *Rocks, Rivers and the Changing Earth* by Herman Schneider and Nina Schneider [Hillside Education, edition]. Please note that there is an index at the end of the book.

## Before the Reading

Use “Connections”, connecting questions, to bridge the gap between chapter readings. They are designed to bring forth what the child already knows about the previous chapter, so that new information can be connected to it.

Teachers should prepare the chapter readings by discussing any “Words to Know” with their students as well as complete any map work as indicated for each chapter. These activities prepare the student for the reading, which facilitates a deeper understanding and quality narrations.

## Before/During the Reading -Investigations

It is essential that this investigation is done either *before* the reading or *during* the reading -when it is presented in the book.

## After the Reading

Students can give an oral narration or use one of the suggested narration prompts.

## Exam Prompts

- Tell the story of any of the following: a raindrop, a pebble, a river, coal, a mountain or metamorphic rock.
- Name or write at least six main topics you learned about in this book. Choose two and tell more of each one.

More exam prompts are included in the complete guide.

## Investigation Narrations -Optional

- Write a narration for an investigation. Include a general sense of what was done in the investigation, your observations and what you can conclude from these observations. Feel free to add any additional thoughts and pose any questions that arise from the investigation. Your narration should be at least 2-3 paragraphs in length and may be typed, if desired. Keep all narrations together in one notebook or binder.
  
- Here is a **general** guideline for how many to complete per term based on Year:
  - Year 5 -2 narrations per term [every 6 weeks]
  - Year 6 -3 narrations per term [every 4 weeks]
  - Year 7 -4 narrations per term [every 3 weeks]
  - Year 8 -6 narrations per term [every 2 weeks]

\*Definitely adjust this to fit each specific student's needs.

## Additional Reading and Activities

Numerous additional activities -which include suggested field trips and field work- as well as additional reading suggestions are included in this guide. These are optional and can be included as best fits.

# Reading Schedule –One Term

Week #	Day One	Day Two	Day Three
1	<i>Rocks, Rivers and the Changing Earth-L1</i>	<i>Rocks, Rivers and the Changing Earth-L2</i>	<i>Rocks, Rivers and the Changing Earth-L3</i>
2	<i>Rocks, Rivers and the Changing Earth-L4</i>	<i>Rocks, Rivers and the Changing Earth-L5</i>	<i>Rocks, Rivers and the Changing Earth-L6</i>

This reading schedule is written for 12 weeks at 3 lessons per week in the complete guide.

# Reading Schedule –One Year

Week #	Lesson
1	<i>Rocks, Rivers and the Changing Earth-L1</i>
2	<i>Rocks, Rivers and the Changing Earth-L2</i>
3	<i>Rocks, Rivers and the Changing Earth-L3</i>
4	<i>Rocks, Rivers and the Changing Earth-L4</i>
5	<i>Rocks, Rivers and the Changing Earth-L5</i>

This reading schedule is written for 36 weeks in the complete guide at 1 lesson per week.

## Lesson 1/ *Rocks, Rivers and the Changing Earth*

- ❖ Read pp. 3-8 from *Rocks, Rivers and the Changing Earth*.

### Before the Reading

- ❖ Connection: Use the title and cover illustration to help you predict what this book might be about. Of what do you hope to learn more?

- ❖ Investigations: p. 6 & p.7 -

IMPORTANT NOTE: It is essential that these investigations are done either before the reading or during the reading

-when it is presented in the book. See the following page for a separate copy.



### After the Reading

- Tell of the river -how it came to be and how it flows.
- Imagine the earth without rivers. What would the earth be like without them? Imagine if rivers flowed upstream. What would the earth be like this way?
- Give a narration of this reading selection and include these words: grade, slant *and* downhill.

## Investigation p. 6

IMPORTANT NOTE: It is essential that this investigation is done either before the reading or during the reading -when it is presented in the book.

### Supplies

- cup of water [refill, as needed]
- sponge
- plate

### Directions

- Over a kitchen sink or outside, hold the dish in a slanting position and place the sponge in the dish.
- Slowly pour water on the highest end of the sponge.

### Observation Discussion

- What do you see when you first began pouring the water What happens next?
- Why do you think the water behaved this way?

## Investigation p. 7

IMPORTANT NOTE: It is essential that this investigation is done either before the reading or during the reading -when it is presented in the book.

### Supplies

- cup of water [refill, as needed]
- large piece of wax paper
- plate, platter or cookie sheet

### Directions

- Place the plate, platter or cookie sheet in the sink [or outside].
- Crumple up the wax paper and put it on the plate.
- Place something underneath one end of the plate to create a slight downhill slant.
- Pour a little water on the uphill end of the crumpled wax paper and see where it goes.

### Observation Discussion

- What do you see as you pour the water? What happens next?
- Why do you think the water behaved this way?

## Lesson 2/ *Rocks, Rivers and the Changing Earth*

- ❖ Read pp. 8-13 from *Rocks, Rivers and the Changing Earth*.

### Before the Reading

- ❖ Connection: Tell how rivers came to be and describe how they flow. In this reading, we will learn more of rivers and their flow.
- ❖ Word to Know: undermine
- ❖ Investigations: p. 8 & p. 12 -see the following page for a separate copy.

### After the Reading

- Give three questions you would ask of this reading selection.
- Tell more of rivers -what keeps them flowing and what changes them?
- Why might the speed of a river's flow change what it picks up?

### Additional Activity

- ❖ Be a Naturalist! Find and study a river near you. Give notes and sketches -with particular attention to how it flows and changes. Share what you've observed with someone, telling of it.

## Investigation p. 8

IMPORTANT NOTE: It is essential that this investigation is done either before the reading or during the reading -when it is presented in the book.

### Supplies

- pitcher of water
- sponge
- plate

### Directions

- Over a kitchen sink or outside, hold the dish in a steeply slanting position and place the sponge in the dish.
- Pour on just enough water to barely fill the sponge, so that little or no water trickles out.
- Now quickly pour on a big splash of water and watch what happens.

### Observation Discussion

- What do you see as you slowly pour a small amount of water? What happens as you quickly pour a large amount of water?
- Why do you think the water behaved this way?

## Investigation p. 12

IMPORTANT NOTE: It is essential that this investigation is done either before the reading or during the reading -when it is presented in the book.

### Supplies

- piece of cardboard folded like a long U
- rough sand -such as used by builders and bricklayers [has little pebbles in it]
- a big pitcher of water
- basin, sink or conduct investigation outside

### Directions

- Fill the U-shaped cardboard with the rough, gravelly sand.
- Hold the cardboard in a slanting position over the basin [or sink or outside space].
- Pour the water, a little at a time, on the sand at the upper end.

### Observation Discussion

- What do you see when pouring the water slowly?
- Why do you think the water behaved this way?

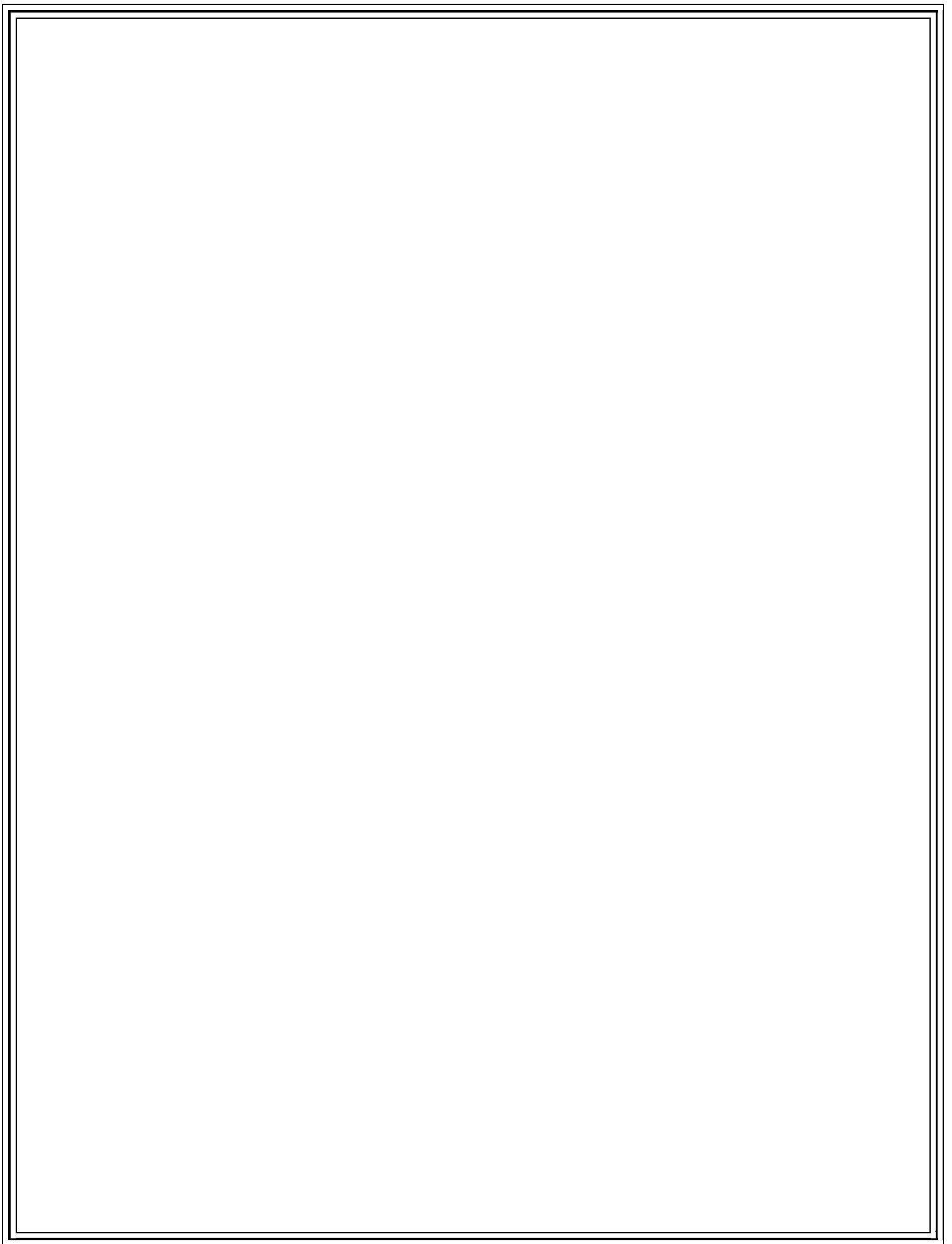
### Directions

- Now, quickly pour a lot of water on, all at once, so that you have a fast stream flowing.

### Observation Discussion

- What do you see when pouring the water quickly?
- Why do you think the water behaved this way?





## Lesson 3/ *Rocks, Rivers and the Changing Earth*

- ❖ Read pp. 13-17 from *Rocks, Rivers and the Changing Earth*.

### Before the Reading

- ❖ Connection: Give one statement and ask one question from the last reading.
- ❖ Words to Know: boulder, rapids and banks
- ❖ Investigations: p. 13 & p. 16 -see the following page for a separate copy.

### After the Reading

- Tell what rivers pick up and how they change “Down Steep Mountains” and “In Less Steep Places”.
- Divide a sheet of paper into thirds. In each section, write a short statement of a concept learned from this reading. Each statement should include a quick sketch, too. [There should be 3 concept statements with sketches.]
- Using salt-dough or other modeling material, create a model of a river flowing down steep places and settling low with less steep places. Share your model, telling of it.
- Tell your story as if a pebble caught in a river’s flow. Alternatively, tell as if a boulder. [You could also tell this comic-strip style.]



