

# Bring Out the Scientist in Your Child



***Deanne Crawford***  
*Consultant, Rainbow Resource Center*  
*dcrawford@rainbowresource.com*

Compiled by Rainbow Consulting Staff:  
Deanne Crawford  
Donna Krahn  
Gina Burmeier  
Janice Price  
*Contact us at [consultants@rainbowresource.com](mailto:consultants@rainbowresource.com)*



[www.rainbowresource.com](http://www.rainbowresource.com) • 888.841.3456

## Bring Out the Scientist in Your Child

### How do I do that?

- ☒ Have a positive attitude!
- ☒ Teach your child to ask questions: Who, What, When, Where, Why, How?
- ☒ Watch the way things move and what they do, observe.
- ☒ Take things apart and see what they look like from the inside.
- ☒ Build things: use kits or make things from scratch.
- ☒ Read library books related to the topics, see what others have to say.
- ☒ Visit places: take field trips.
- ☒ Have books and items available to allow for independent investigation.
- ☒ Do experiments: try your hypothesis or idea.

### Scientific questioning is called Scientific Method:

- ☒ Ask a question or state the problem.
- ☒ Form a hypothesis: what do you think will happen?
- ☒ Test your hypothesis: do an experiment to see if you're right and observe the results.
- ☒ Collect your data (information): write it down or draw pictures.
- ☒ Conclusion: were you right?
- ☒ Start all over again: remember there should always be another question.

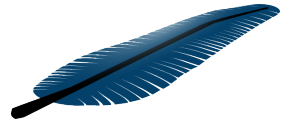
### Why do experiments, demonstrations and labs?

- ☒ To see if your idea works.
- ☒ To demonstrate a new concept.
- ☒ To give understanding to concepts being presented: a visual will sometimes help.
- ☒ To get someone's attention.
- ☒ ***JUST FOR FUN!***

## Science Scavenger Hunt

You need to find these things and put them in your bag, or write down where you found them, or answer the question:

1. a live bug
2. a clover
3. a blooming flower
4. some dead grass
5. 3 different pieces of litter
6. a weed that is not green
7. a spider (dead or alive)
8. dirt
9. a piece of leftover food
10. an oak leaf
11. a seed
12. a baby plant
13. a smooth, round rock
14. a bird feather
15. a twig with 12 leaves
16. a fungi
17. a leaf that is not green
18. bark
19. a fossil
20. a source of water
21. a bird's nest
22. a shadow
23. a furry animal
24. identify a bird
25. identify a cloud
26. What does the cloud look like?



# Milk Jug Magnifier



## Materials Needed:

1-gallon plastic jug  
12 x 12-inch piece of plastic wrap  
1 thick rubber band  
Water

## Construction:

1. Cut top off of your jug.
2. Cut a circle in opposite sides of the jug (large enough to put your hand into).
3. Place plastic wrap over the top of jug.
4. Place rubber band over plastic wrap, around the top of the jug.
5. Leave plastic slightly loose.
6. Pour water into plastic (amount of water needed will be determined by the slack in the plastic wrap).
7. Place items to be observed through holes on the side.

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

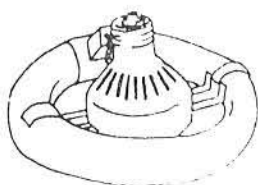
# Plant Starter Box

## Materials

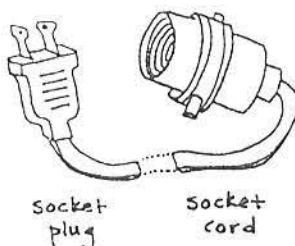
- ❖ one empty copy paper box
- ❖ a roll of 12 inch wide aluminum foil
- ❖ white glue
- ❖ Clear tape
- ❖ cutting blade
- ❖ scissors
- ❖ plastic plate or lid from plastic container
- ❖ 30 watt fluorescent light
- ❖ Electric cord with socket

## Construction

1. Apply thin layer of glue to inner surfaces of the box and attach aluminum foil to cover the entire inside of box.
2. Cut 3 vent slots approximately 4 x 14 cm in the top of sides and back.
3. Cut a hole approximately 2.5 cm in the center of plastic lid and trim off the rim of the lid to make it flat.
4. Cut a hole in the center of the top of the box the same size as the hole in the lid.
5. Insert the light fixture through the hole from inside the box.
6. Place disk over light fixture from the top and attach the plug and socket.
7. Tape aluminum foil curtain to top front edge of box.
8. Strengthen edges and center of curtain with Clear tape.
9. Attach a ruler to the bottom edge of the foil curtain for weight.

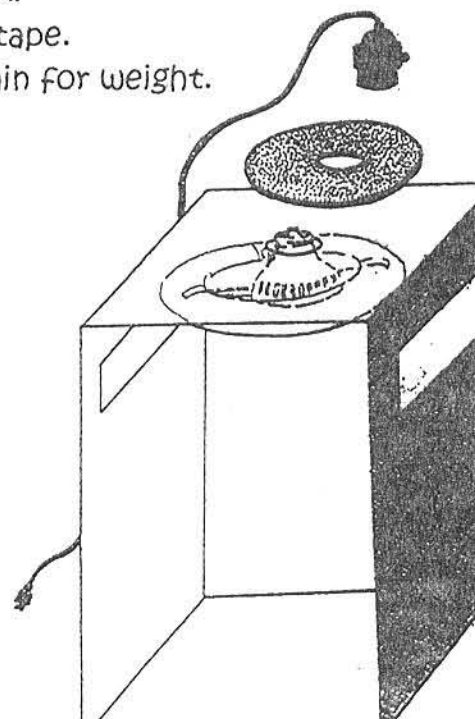


30-39 watt



socket  
plug

socket  
cord



# Ooblek!

## Materials Needed:

1-cup cornstarch

1-cup water

A few drops of food coloring, you choice

## Instructions:

Mix food coloring in water, then pour colored water into cornstarch. Stir well!

This is a fun concoction when you're learning about states of matter. Is it a solid or a liquid?

*Warning: Don't pour this down your drain. It will clog!*



*Liquid or solid?*

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Cookie Mining Exercise

### Materials:

Round toothpicks  
Flat toothpicks  
Paper clips (bent out)  
Plastic fork  
Paper towels  
2 to 3 kinds of chocolate chip cookies



### Rules:

Each child or group is given \$30.00 in cookie mining money to set up their mine. Each miner chooses a name for their company. Players are to view the cookie display and decided which cookie (property) they will buy and the equipment they will need. They will use their money to purchase both from Mining Land Office.

1. Place the cookie on grid paper and draw around it.
2. No miner can use their fingers to hold the cookie after they have traced it. The only things that can touch the cookies are the mining tools and the paper the cookie is sitting on.
3. Miners should be allowed a minimum of five minutes to mine their chocolate chip cookie. I usually do this with about a 15 minutes time limit.
4. A miner can purchase as many mining tools as they desire and the tools can be of different types.
5. If the mining tools break, they are no longer usable and a new tool must be purchased.
6. Remind your students to keep it meat. At the end they will need to count every square which has crumbs on them for their reclamation expense.
7. The miner with the most money at the end of the game wins.
8. All players win at the end of the game because they get to eat the remainder of their cookie, and the mined chocolate chips.

### Review:

This activity provides the student an opportunity to exercise problem solving skills. Decisions are made to determine the best way to spend their money by deciding what property and tools to purchase.

Students learn a simplified version of how a coal mine operates. They also learn something about the difficulty of reclamation or putting the land back to its original condition.



## Cookie Mining



1. Beginning Funds: \$30.00

2. Name of Cookie: \_\_\_\_\_

3. Price of Cookie: \_\_\_\_\_  
(Cookie #1—\$3.00, Cookie #2—\$5.00, Cookie #3—\$7.00)

4. Size of Cookie: \_\_\_\_\_ squares covered (count all of the squares on the paper grid which are covered by the cookie; if they are over 1/2 covered, count them)

5. Equipment:

flat toothpick \_\_\_\_\_ x \$2.00

round toothpick \_\_\_\_\_ x \$4.00

paper clip \_\_\_\_\_ x \$6.00

plastic fork \_\_\_\_\_ x \$8.00

TOTAL EQUIPMENT COST:..... \_\_\_\_\_

6. Mining \_\_\_\_\_ minutes x \$1.00 (cost of removing chips) \_\_\_\_\_

7. TOTAL COST OF MINING:..... \_\_\_\_\_  
(cost of cookie, equipment and time)

8. Chip Removal:

Mass of Chips \_\_\_\_\_ x \$2.00 per 1/10 of a gram

VALUE OF CHIPS:..... \_\_\_\_\_

9. HOW MUCH DID I MAKE?

Value of chips \_\_\_\_\_  
(minus)

Total Cost of mining \_\_\_\_\_

PROFIT/LOSS \_\_\_\_\_

10. Reclamation: \_\_\_\_\_ squares x \$1.00 = \_\_\_\_\_  
(subtract this total from your profit/loss total)

11. Total Profit/loss after reclamation expenses:..... \_\_\_\_\_



**10**



# Cookie Mining Money



# Cookie Mining Money



# Cookie Mining Money

A blank sheet of graph paper featuring a uniform grid of squares. The grid consists of 10 columns and 10 rows, creating a total of 100 small square units. The lines are thin and black, set against a white background. There are no margins, text, or other markings on the page.

## Book List for Hands-On Activities and Experiments

07640	Mudpies to Magnets (PreK-2)
07638	More Mudpies to Magnets (PreK-2)
000987	Science Wonderland for the Very Young (PreK-2)
45256	Let's Play Science (K-3)
26264	Usborne Science Activities volume 1: Water, Magnets, Light & Mirrors (1-4)
26265	Usborne Science Activities Volume 2: Air, Kitchen, & Plants (1-4)
26266	Usborne Science Activities Volume 3: Batteries, Your Body & Weather (1-4)
46939	Klutz: Boom, Splat, Kablooey (3-8)
25668	D.K. 101 Great Science Experiments (2-6)
12176	Cooking & Science Elementary Students (3-8)
12177	Cooking & Science Secondary Students (9-12)
5436	150 Captivating Chemistry Experiments (9-12)
33547	150 More Captivating Chemistry Experiments (K-12)

### Janice Van Cleave books:

4230-Magnets (3-7)	8049-Weather (3-7)
8045-Rocks and Minerals (3-7)	38289-Engineering for Every Kid (4-8)
8030-Electricity (3-7)	12845-Biology for Every Kid (4-8)
8032-Human Body (3-7)	25103 Science Around the Year (PreK-6)
8048-Volcanoes (3-7)	



## Internet Resources

### Earth Science

geology.com  
usgs.gov  
isgs.uiuc.edu  
neic.usgs.gov  
worldatlas.com  
nasa.gov

### Food & Nutrition

5aday.gov  
foodsafety.gov  
healthierus.gov  
mypyramid.gov

### Biology

biology4kids.com  
kidsbiology.com

### Life Science

learn.genetics.utah.edu  
depts.washington.edu/bonebio

### Chemistry

chemistry.about.com  
chemistry.org  
chemistry.org/kids  
thinkquest.org/J001539  
chem4kids.com

### Physics

physicsclassroom.com  
physics.about.com  
colorado.edu/physics/2000

### General

popsci.com  
livescience.com  
nationalgeographic.com  
discovery.com  
sciencebuddies.org  
teach-nology.com  
teachervision.fen.com  
familyfun.com  
nps.gov  
eepybird.com  
waldothec clown.com  
stevespenglerscience.com

