

TABLE OF CONTENTS

Introduction.....3

Monarch Butterfly

I Am a Butterfly	5
The Life of a Butterfly	7
Caterpillar Keeper	10

Bean

My Suitcase Is Packed	11
Bean Sprouts	12
Comparing Seeds	13

Sunflower

Sunflower Game	15
Model Sunflowers	18
Grow Your Own Sunflowers.....	20

Wood Frog

Wood Frog Life Cycle Wheel	22
Surviving a Cold Winter	25
If I Were a Frog Egg	27

Ladybug

Ladybugs Up Close	28
What an Appetite!.....	29
Ladybug, Ladybug, Fly away Home.....	32

Chicken

Investigating Eggs	35
I've Grown My Comb and Wattles.....	37
Simon Crows	39

Jumping Spider

What Is a Spider?.....	41
The Life of a Spider.....	43
Spider Web Math.....	45

Maple Tree

Beautiful Fall Leaves	47
Spinning Seeds	49
The Maple Tree's Sweet Sap	52

Green Snake

Simulating Snake Eggs	54
Snakeskin and Scales	55
Skinny as a Snake	57

Hummingbird

Tiny Nests Are Best	61
Fledglings Learn to Fly	63
Plant a Hummingbird Garden	65

Horse

A Foal Stands Up	66
Horse Tag	69
A Horse of a Different Color	70

Fighting Fish

Bubble Nests for Babies	73
I'm Just a Small Fry	74
Design a Better Betta	77

Putting It Together.....79

WOOD FROG LIFE CYCLE WHEEL

There are many different types of frogs, but the stages of their life cycles are similar. All frogs begin as tiny eggs laid in water; hatch into tadpoles; undergo metamorphosis, developing legs and lungs to replace their tail and gills; and emerge as adult frogs. Some frogs, like most amphibians, spend time in or near water, but the wood frog only visits water for breeding. It spends most of its adult life on the floor of a woodland or forest area. Read the book *Wood Frog* to your students so they become familiar with this type of frog. Then, invite them to construct their own wood frog life cycle wheel to illustrate the changes that take place in the frog's life.

DIRECTIONS

- 1 Share the book *Wood Frog* while discussing with students the frog's metamorphosis and the coloration and dark eye mask typical of all wood frogs.
- 2 Give each student a card-stock copy of each Life Cycle Wheel reproducible. Have students draw a picture that matches the sentence(s) in each section of the second page and color both pages.
- 3 Have them cut out both parts of the life cycle wheel and use the tip of pointed scissors to poke a hole at the X on the top wheel and at the intersection of the lines on the bottom wheel.
- 4 Have students insert a brass fastener into the hole in the top circle and through the bottom circle and open the fastener flat on the back.



- 5 Have students write their name on the front of the wheel. Invite them to turn the wheel to observe the stages in the life cycle of a wood frog and read the stages to a partner.

MATERIALS

- ◆ *Wood Frog*
- ◆ card stock
- ◆ Life Cycle Wheel reproducibles (pages 23–24)
- ◆ crayons or markers
- ◆ scissors
- ◆ brass fasteners

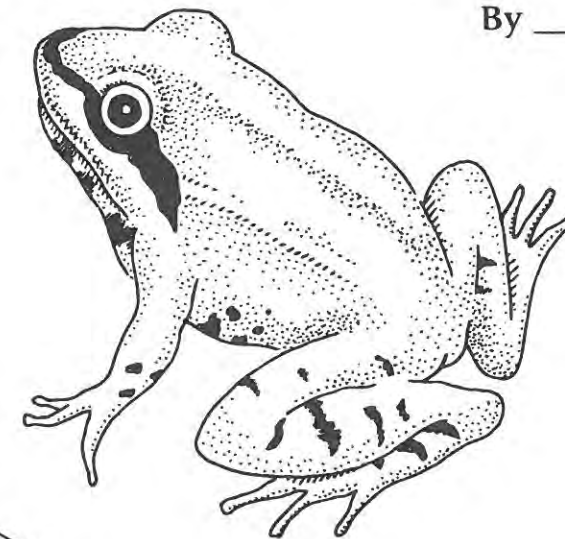
IN YOUR JOURNAL

1. What are the stages of a wood frog's life cycle?
2. What is an amphibian?
3. Why is this frog called a "wood frog"?

Wood Frog's Life Cycle

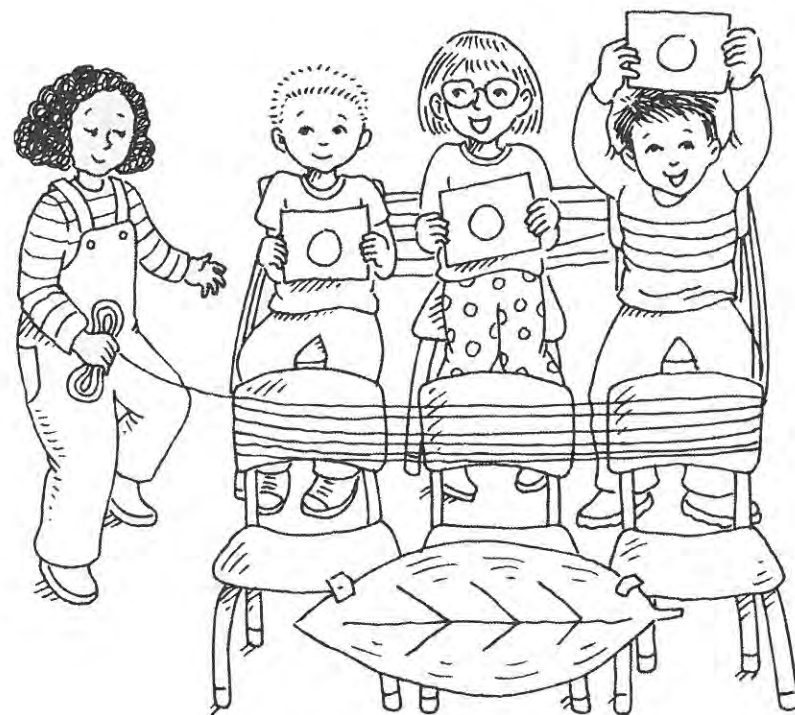
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By _____



6 Have groups plan how they will portray their stage in the cycle. The following are ideas for enacting some of the stages.

- Students in the "egg-sac" group can cut a big leaf shape from green butcher paper and tape it to the front of a small double row of chairs. One student acts as the mother spider and weaves a white yarn egg sac around the chairs. She then places the other members of her group (the eggs) inside the sac. They can each hold a picture of an egg in front of them.
- The "spiderling" group can create little spider pictures and some fly pictures for their costumes. Some can emerge from the sac and go searching for a fly to jump on.
- The "molting" group can have students remove sweaters and crawl away.
- The "courting" group can dress in black (males) with one member in brown (a female). The males "dance" in front of the female.



7 Invite the groups to take turns acting out the story of the jumping spider's life cycle in sequence.

IN YOUR JOURNAL

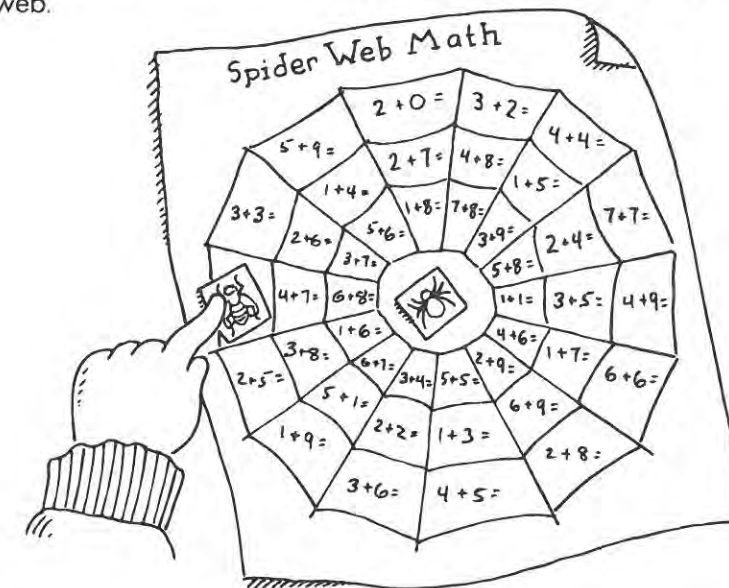
1. Describe the stages in a spider's life cycle.
2. How are newborn spiders different from newborn insects?
3. Describe how you acted out your life cycle stage.

SPIDER WEB MATH

Many spiders catch their prey in webs made of fine, silky threads. Spider webs come in various shapes and designs, including funnels, orbs, triangles, and domes. Some spiders just weave an irregular mass of silk threads. Web-spinning spiders usually construct their web and wait for an insect to crawl onto it. If a spider feels a very slight vibration on the web, it knows the vibration was probably made by wind or a drop of water. If the movement is very strong, the spider waits or hides, fearing an animal too big to catch is on the web. If the movement of the web silk feels just right, the spider investigates. Share the book *Jumping Spider* with your students, and invite them to play the math game described below in which the spider chases the fly.

DIRECTIONS

- 1 Fill copies of the Spider Web Math reproducible game board with addition, subtraction, multiplication, and/or division problems. The game can be used at a learning center or as a whole-class activity.
- 2 Laminate the game cards for durability.
- 3 Divide the class into pairs, and give each pair one game card and two game markers. One player, the "spider," places a marker in the middle of the web. The other player, the "fly," places a marker in any outer section of the web.
- 4 To play, students take turns selecting a math problem in a space adjacent to their current position. If they solve the problem, they move to that space. If not, they stay where they are. The object of the game is for the fly to cross the web before the spider catches it. Players can move in any direction on the web.



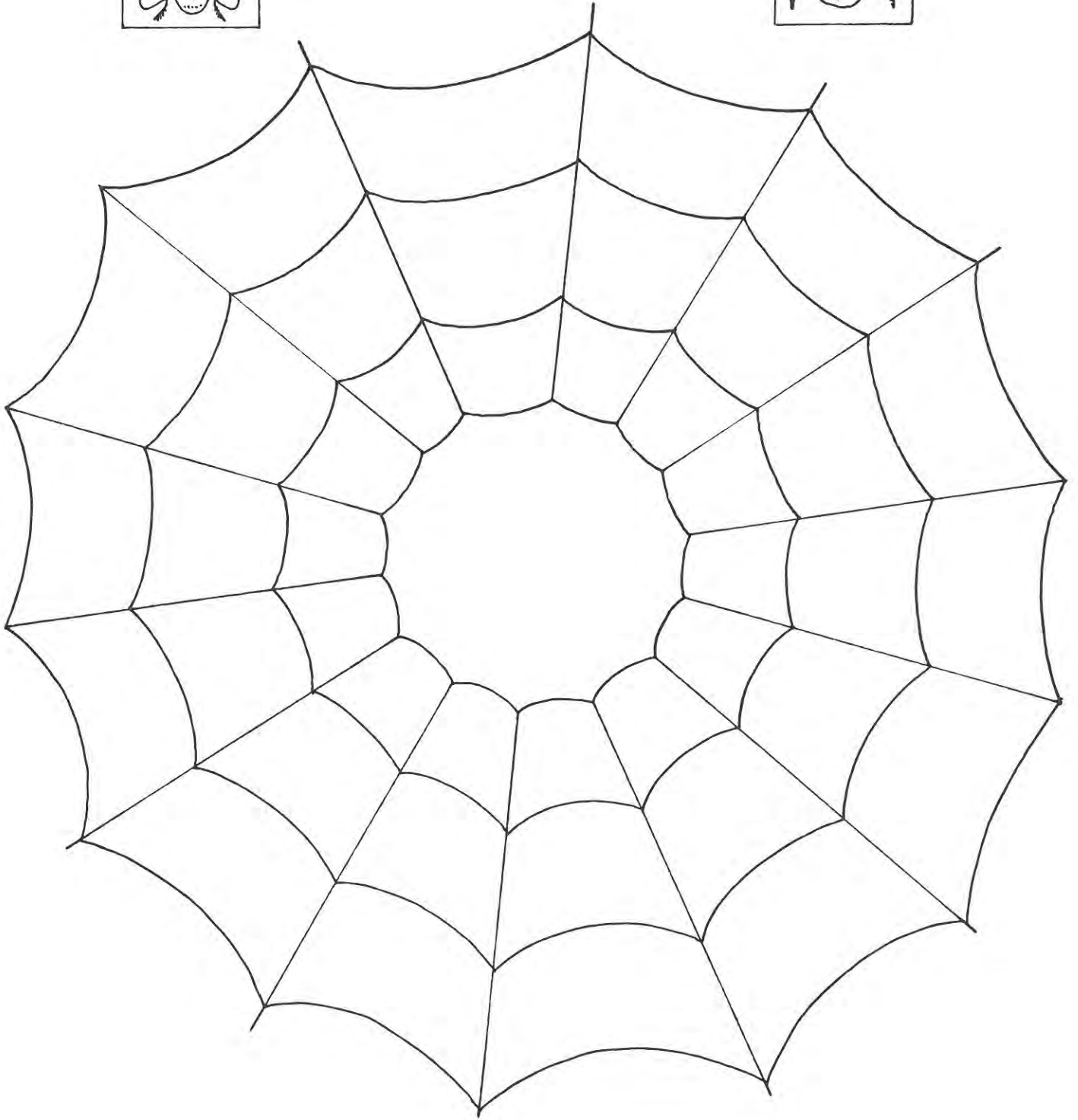
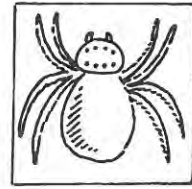
MATERIALS

- ◆ *Jumping Spider*
- ◆ Spider Web Math reproducible (page 46)
- ◆ laminator
- ◆ game markers (e.g., gaming chips, beans, plastic spider and fly)

IN YOUR JOURNAL

1. How does a spider know if there is prey on its web?
2. Describe different types of spider webs. Draw your favorite.
3. Tell about the game you played. What are some good strategies for the game?

Spider Web Math



SOLVE

BREAK THE CODE

Name _____ Date _____

Directions: Use the key to decode words 1-10. Then write the number of the word that matches each definition.

A	B	C	D	E	F	G	H	I	J	K	L	M
W	🐞	🐜	🥚	🐛	🐡	🐍	🌱	🐉	🐙	🐘	🐔	🐱
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
🐇	🐘	🐆	🐎	🦒	🐘	🐘	🐘	🐘	🐞	🐞	🐞	🐞

- 🐞🐞🐞🐞 = _____
- 🐞🐞🐞🐞🐞 = _____
- 🐞🐞🐞 = _____
- 🐞W🐞🐞 = _____
- 🐞W🐞🐞W = _____
- 🐞🐞🐞🐞W🐞🐞 = _____
- 🐞🐞🐞? = _____
- 🐞🐞🐞🐞 = _____
- W🐞🐞🐞 = _____
- 🐞🐞🐞🐞 = _____

- _____ How an animal breaks out of an egg
- _____ Ladybugs and aphids are tiny _____
- _____ The part of the egg that protects the baby
- _____ This provides food for animal babies before they hatch
- _____ A snake's eggshell is thick and _____
- _____ Spotted salamanders coat their eggs with this
- _____ Young salamanders spend the first part of their life here
- _____ Earthworm eggs are surrounded by mucus, which dries to form this
- _____ Young ladybugs' favorite prey
- _____ Young ladybugs

INVESTIGATE

STRONG, STRETCHY STRING

BACKGROUND

Some spider silk is sticky and some is dry. Some spiders use silk to weave delicate webs and some use silk to make tangled nests. No matter what it feels like or how it is used, spider silk is the strongest natural fiber in the world. In this investigation, you will test the strength and other characteristics of some manmade fibers.

MATERIALS

- fishing line, twine, sewing thread, dental floss (several long pieces of each)
- paper towels
- plastic knife
- tape
- pencils

DIRECTIONS

Work with a partner to run both of the tests on each kind of string. Record what you find on the Data Sheet.

TEST 1—STRONG STRING

- Place a thick layer of paper towels on your work surface.
- One partner holds the ends of the string down on the towels.
- The other partner uses a plastic knife to saw across the string for 30 seconds. (The first partner can watch the clock to keep time.)
- Record how long it took to cut the string. If the string does not break after 30 seconds, draw an X in the box.
- After you complete Test 1 on all four strings, answer the Test 1 Question in the Conclusion section.

TEST 2—STRETCHY STRING

- Tape one end of the string around the middle of one pencil. Repeat by taping the other end to a second pencil.
- Each partner holds a pencil (while sitting down). Pull the pencils away from each other and time how long it takes to break the string.
- Record the time it takes to break the string on the Data Sheet. If the string does not break after 30 seconds, draw an X in the box.
- Complete the rest of the Data Sheet.

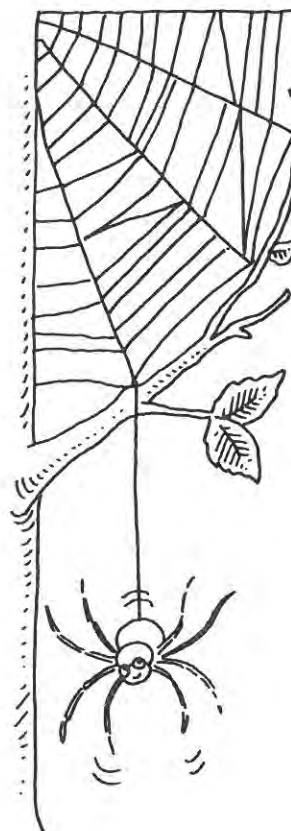


TABLE OF CONTENTS

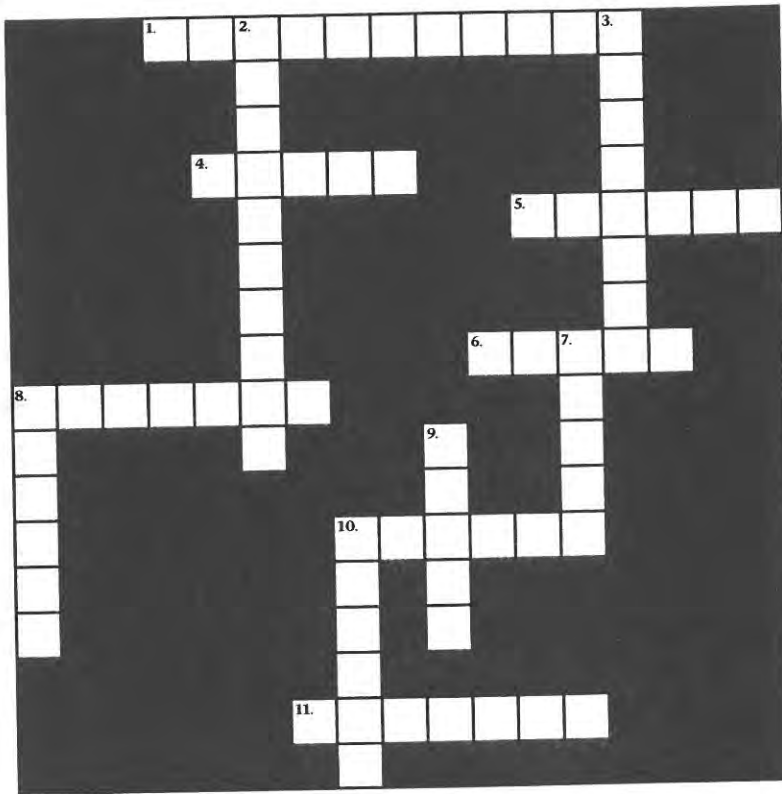
Introduction	3
Birds Build Nests	5
Insects Visit Flowers	11
Seeds Travel	17
Birds Use Their Bills	23
Animals Hatch from Eggs.....	29
Spiders Spin Silk.....	35
Animals Hide	41
Animals Grow New Parts	47
Animals Prepare for Winter.....	53
Insects Grow and Change	59
Animals Are Poisonous	65
Plants Eat Insects	71
Answer Key	77

SOLVE

CROSSWORD PUZZLE

Name _____ Date _____

Directions: Read the clues and fill in the answers using words from the word bank.



WORD BANK

acorn
burdock
float
hitchhikers
samara
seedpod
seeds
spines
sprout
stores
sunlight
touch me not
waste

Across

1. Seeds that attach to animals' fur or feathers can be called this
4. Oak tree seed
5. Hitchhiking seeds use these to attach
6. A chipmunk leaves a strawberry seed behind in its _____
8. The container for a jewel weed's seeds
10. _____ of food—a squirrel's wintertime collection
11. One kind of hitchhiking seed

Down

2. A jewel weed is also called a _____ - _____
3. _____, soil, and water are needed for seeds to grow
7. The wind helps _____ travel
8. Maple tree seed
9. Dandelion seeds do this when they travel
10. A seed will do this if it has enough light and water



SOLVE

MYSTERY WORD

Name _____ Date _____

Directions: Use a word from the word bank to complete each sentence.

1. The planarian ___ ___ is a simple animal that can grow a new tail or a new head.
2. A baby frog, or ___ ___, can grow a new tail if it is bitten off.
3. An earthworm's important organs are found in its first 35 ___ ___ ___.
4. If an ___ ___ lizard's tail gets bitten, the tail will break off so the lizard can escape.
5. Animals like ___ ___ and ___ ___ can grow new claws.
6. A ___ ___ can survive even if it loses some of its arms.
7. Like the tadpole, the ___ ___ is another water lizard that can grow new parts.

WORD BANK

anole	salamander
crabs	segments
crayfish	starfish
flatworm	tadpole

MYSTERY WORD

Now unscramble the boxed letters to spell the Mystery Word.
(Hint: This word means "growing new parts.")
