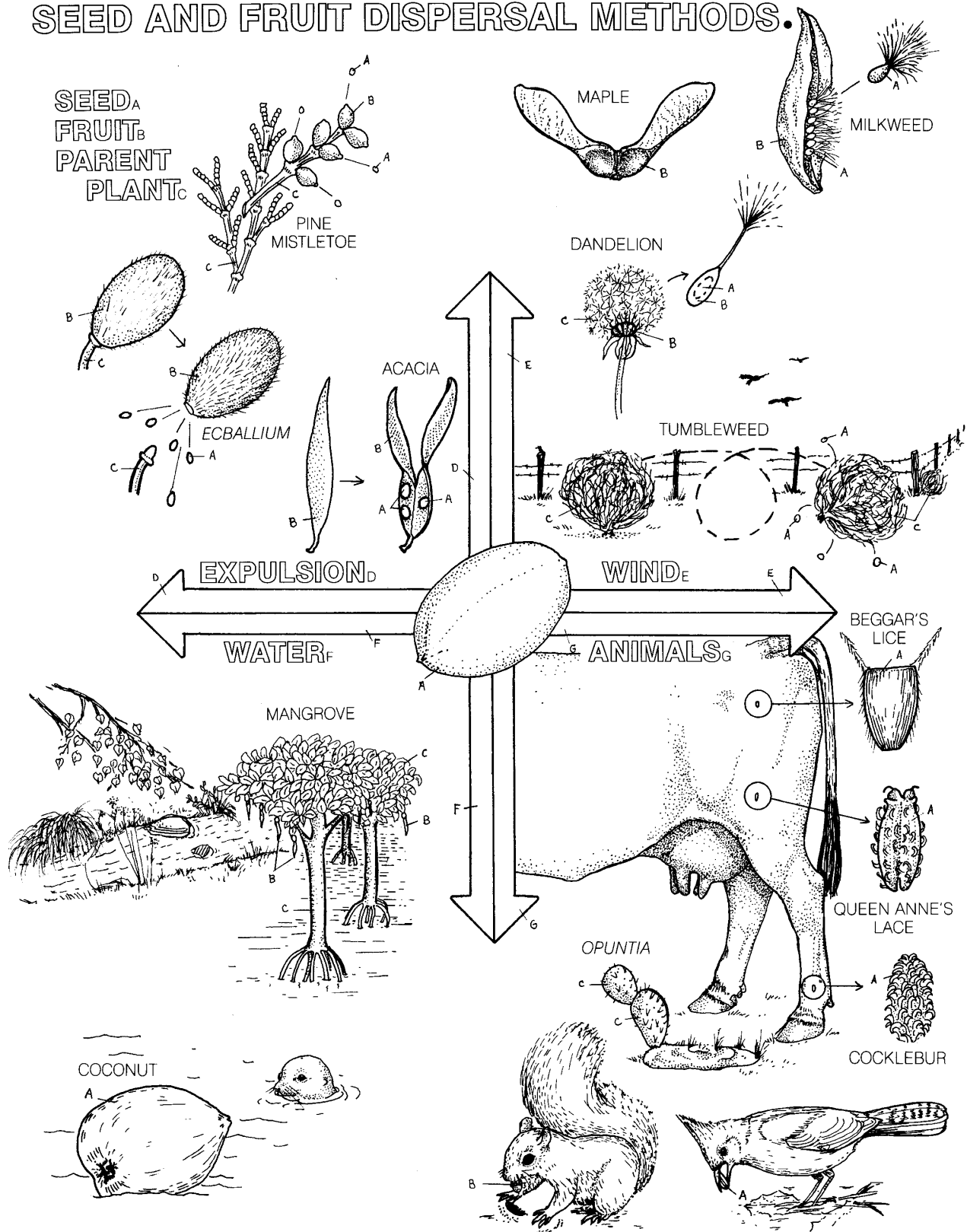


SEED AND FRUIT DISPERSAL METHODS.



Seed and Fruit Dispersal Methods

Name: _____

Period: _____

Follow the directions below to color-code the diagram and to answer the questions. You can use p.401-402 of your textbook to help you. Use colored pencils, and check off each box ☐ as you finish that part of the instructions.

Plants grow in one spot. So, their offspring need to be spread to different areas so all of the plants are not competing for the same resources. For this exercise, you will be identifying different ways that seeds can be dispersed (spread out) from a plant. You should also be able to identify the dispersal method with the shape and structure of the seed and its fruit.

Start by filling in the blanks in the sentences below. Use the following terms: **fertilization, fruit, ovary, ovule, seed**. *Hint: reread p.401.*

The _____ of a flower turns into a _____ after
_____. The _____ that is around the ovule turns
into a _____.

Let's start by coloring the all five words in the title of the diagram black ☐ . Next, look in the list of terms in the upper left, find SEED, and carefully color the letters light brown ☐ . Then, use light brown again to color the large seed in the center of the page, labeled with an A ☐ .

1. A baby plant is inside the seed. Most of the seed is made of food for the baby plant. Why does the baby plant need this food? *Hint: reread p.369 and p.402.*

The term *expulsion* refers to a type of seed dispersal in which the seed pod blasts its seeds out if it is touched or gets dried out. In the diagram, find EXPULSION, and carefully color the letters yellow ☐ . Next, use yellow again to color the two large arrows that are labeled with a D ☐ . For the expulsion examples, color any seed labeled with an A light brown ☐ . Color FRUIT in the upper left green ☐ , along with any fruit (B) in the expulsion examples green ☐ . Finally, color PARENT PLANT in the upper left light green ☐ , along with any parent plant (C) in the expulsion examples light green ☐ .

2. *Ecballium* is commonly known as “exploding cucumber” (not kidding!) When the very poisonous fruit of this plant is ripe, it squirts out its seeds. Why is this a good way for this plant to spread its seeds?

3. Seeds spread by expulsion only travel a little ways. Are the seeds more likely or less likely to land in a spot that they can grow well? Explain your answer.

Seed and Fruit Dispersal Methods

Name:

Period:

Other types of plants have their seeds dispersed by the wind. In the diagram, find WIND, and carefully color the letters light blue □ . Next, use light blue again to color the two large arrows that are labeled with an E □ . For the wind examples, color any seed labeled with an A light brown □ . Color any fruit (B) in the wind examples green □ . Finally, color any parent plant (C) in the wind examples light green □ .

4. Look at the shapes of the seeds and fruits from the plants that have evolved to use wind dispersal. How do these shapes help the seeds and fruits to be carried by the wind?

5. Will the wind always carry seeds to a perfect spot to grow? Why or why not?

6. With what you have learned so far, which type of plants will need to have more seeds, those that disperse by expulsion or those that disperse by wind? Explain your answer.

Certain types of plants have their seeds dispersed by water. In the diagram, find WATER, and carefully color the letters dark blue □ . Next, use dark blue again to color the two large arrows that are labeled with an F □ . For the water examples, color any seed labeled with an A light brown □ . Color any fruit (B) in the water examples green □ . Finally, color any parent plant (C) in the water examples light green □ .

7. Both coconut palms and mangrove trees live near or in water. What needs to be special about their fruit and seeds if these trees are to successfully reproduce?

Many plants rely upon animals to disperse their seeds, and there are lots of ways for this to happen. In the diagram, find ANIMALS, and carefully color the letters orange □ . Next, use orange again to color the two large arrows that are labeled with a G □ . For the animal examples, color any seed labeled with an A light brown □ . Color any fruit (B) in the animal examples green □ . Finally, color any parent plant (C) in the animal examples light green □ .

8. Some seeds are designed to stick to an animal's fur and get carried to a different location. What is special about the shape of these seeds?

Seed and Fruit Dispersal Methods

Name:

Period:

9. Other seeds have a yummy fruit around them, often so tasty that animals eat the fruit along with the seeds inside. So, these seeds get carried around in the animal's insides, and are pooped out later. Those seeds that travel through an animal need to have a very tough seed coat, resistant to the acids of a digestive system. Why would it be an advantage to have a seed survive through an animal's digestive tract, and then get pooped out in a big pile of manure?

10. You have seen animals like birds and squirrels eating seeds and nuts. Obviously, if a seed or nut has been chewed up, it can no longer make a baby plant. Would plants that produce yummy, edible seeds need to make a lot of seeds or just a few? Explain your answer.

Now for something *very* weird about a particular kind of plant seed. In Asia there is a cat-like animal called a civet. It likes to eat berries (with the coffee bean—a seed—inside) from coffee plants. It chews on the soft outside pulp, then swallows. After a little more than a day, it poops out the coffee beans with a little bit of pulp still around them. The beans are then *collected* by a farmer, who cleans off the rest of the pulp and sells the beans to be roasted and turned into coffee. Apparently, inside the warm little civet, the coffee plant beans (remember—they are actually seeds) begin to germinate (grow). This leads to chemical changes that apparently make the coffee taste less bitter. The digestive juices inside the civet also seep into the beans themselves, making chemical changes that change the flavor as well. Bags of these pooped-out coffee beans can sell for \$100 to \$600 a pound. Don't worry. It won't be sneaked into your Starbucks.



image from <http://catpoopcoffeeinc.com/asian-palm-civet/>

Practice: 19 points