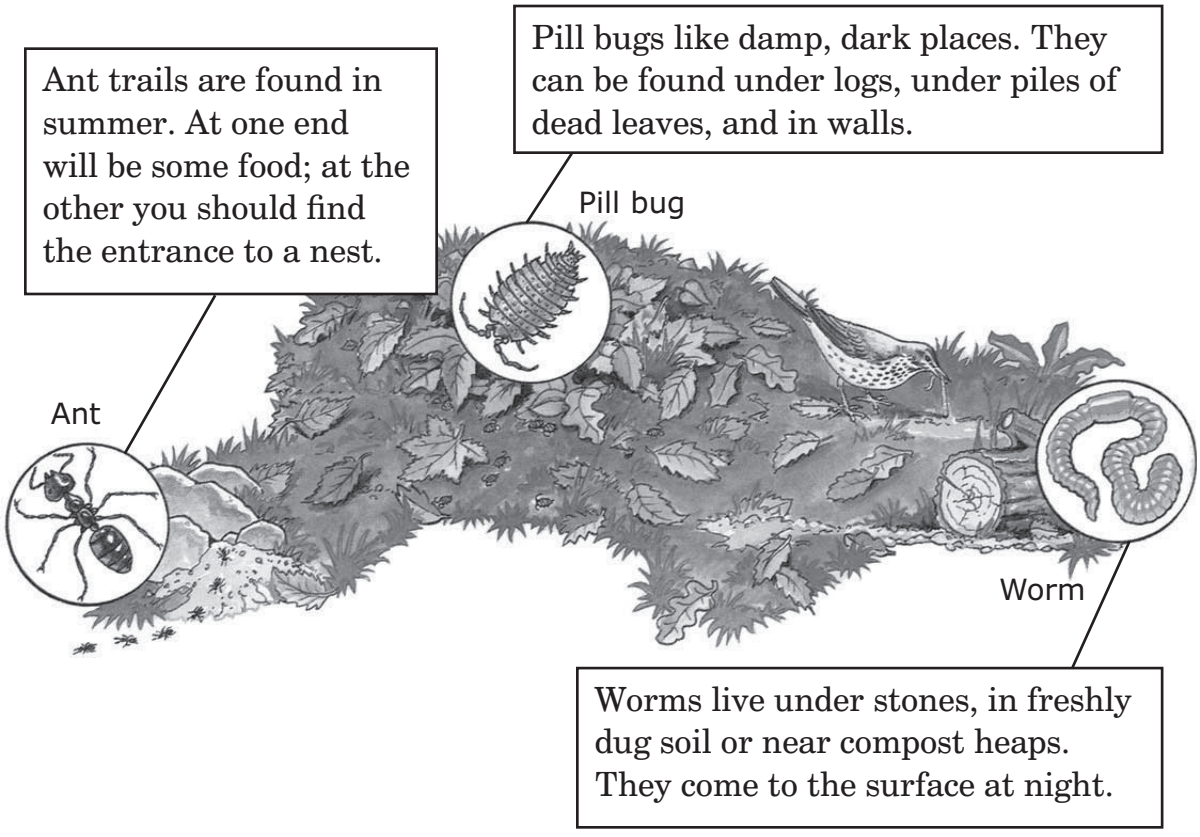
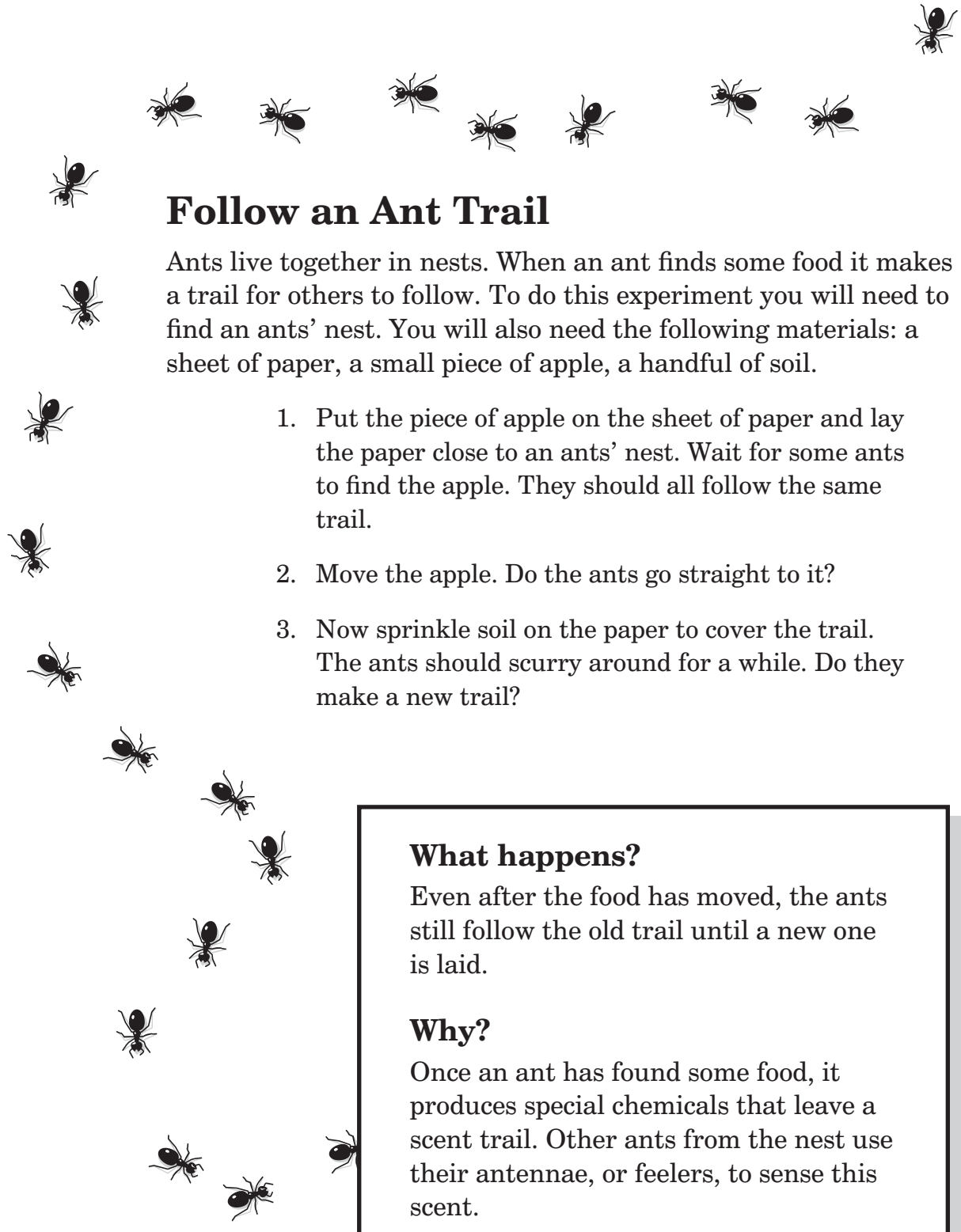
Searching for Food

Here are three projects about the things small creatures eat and the ways they search for food. First you need to find actual ants, pill bugs, and worms. Treat them carefully and make sure you put them back where you found them after you have finished studying them.

- Follow an Ant Trail
- Study Pill Bugs
- Make a Wormery

Where to find ants, pill bugs, and worms





Follow an Ant Trail

Ants live together in nests. When an ant finds some food it makes a trail for others to follow. To do this experiment you will need to find an ants' nest. You will also need the following materials: a sheet of paper, a small piece of apple, a handful of soil.

1. Put the piece of apple on the sheet of paper and lay the paper close to an ants' nest. Wait for some ants to find the apple. They should all follow the same trail.
2. Move the apple. Do the ants go straight to it?
3. Now sprinkle soil on the paper to cover the trail. The ants should scurry around for a while. Do they make a new trail?

What happens?

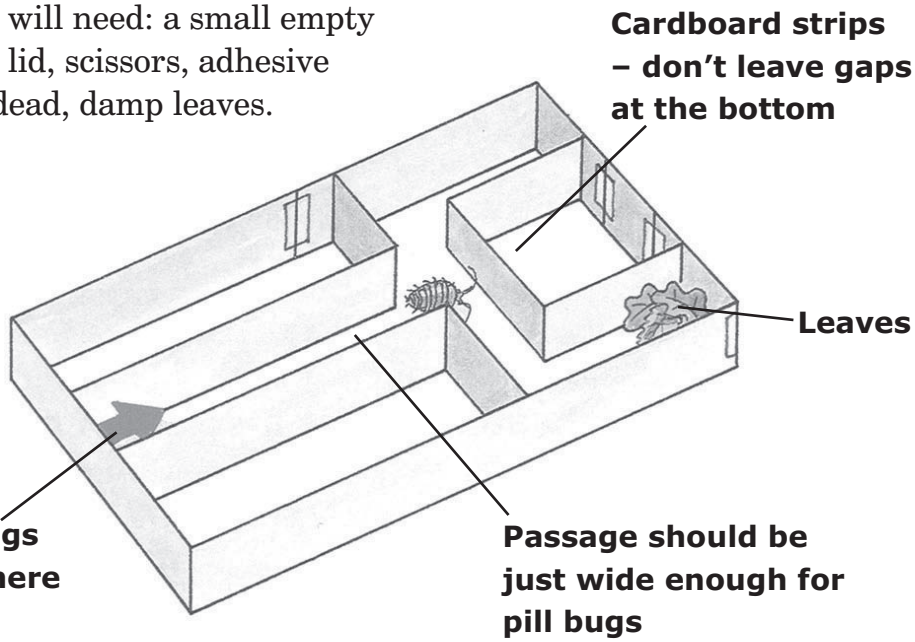
Even after the food has moved, the ants still follow the old trail until a new one is laid.

Why?

Once an ant has found some food, it produces special chemicals that leave a scent trail. Other ants from the nest use their antennae, or feelers, to sense this scent.

Study Pill Bugs

Pill bugs have sensitive antennae. Make this box, then collect six pill bugs in a container. Watch how they find their way when you put them in a box. You will need: a small empty box with a lid, scissors, adhesive tape, and dead, damp leaves.



1. Use the lid to make three long strips for making the passages in the picture.

2. Let your pill bugs walk along the passage one at a time. When they reach the end of the passage, some will turn left and some will turn right.

3. Put damp leaves in the right hand side of the box. Now let the pill bugs walk through the box again. Which way do they go?

What happens?

The pill bugs will turn to the right toward the food.

Why?

The pill bugs can sense the food with their antennae. They use them to find the leaves.

Make a Wormery

Worms are hard to study because they don't like the light. As soon as they sense it, they wriggle away, trying to find a dark place again. To see how worms live and feed, make a wormery like the one shown here. Then find two or three worms to put in it. It is important to remember not to pull on the worms or you may hurt them. They are covered with bristles that grip the soil tightly.

You will need

- Shoe box
- Adhesive tape
- Pen
- Scissors
- Large plastic bottle
- 1 mug of sand
- 3 mugs of damp, crumbly soil
- Small cubes of onion and potato

1. Tape one side of the shoe box lid to the box, so it opens like a door. Poke holes in the top of the box with the pen to let air and light into the wormery.

2. Cut the top off the bottle. Then fill it with loosely packed layers of soil and sand. Scatter potato and onion on the surface.

3. Gently drop in your worms, then stand the bottle in the box and close the door. Leave it outside in a cool, dry place for four days.

4. After four days, go back and look at the bottle. What is different about the sand and soil?

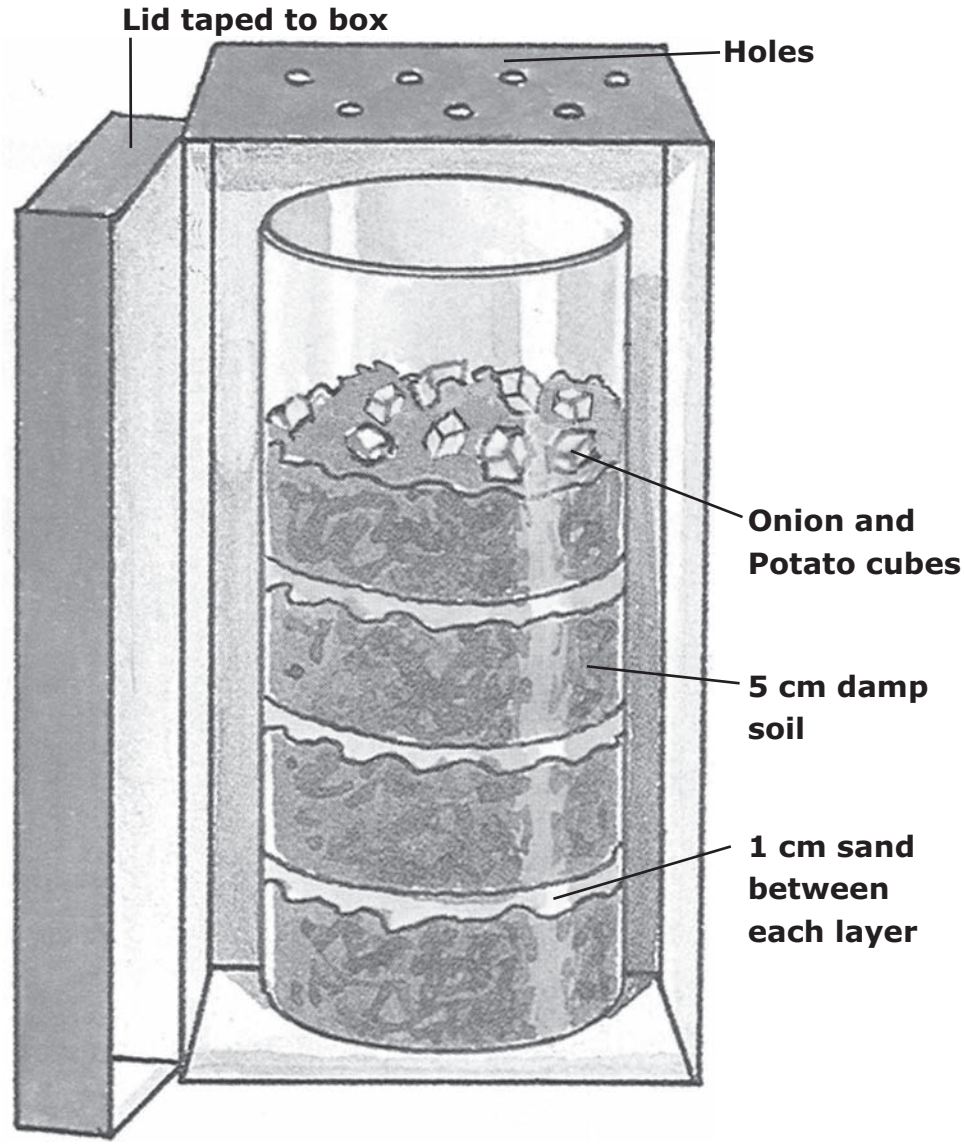
Don't forget: when you've finished with this project, put the worms back where you found them.

What happens?

After four days, the layers of sand and soil will have been mixed together.

Why?

The worms mix the sand and soil coming to the surface to eat the food and then tunneling underground to get away from the light.



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Questions: Searching for Food

1. What is the main purpose of the article?

   ✶ (A) to describe different projects you can do

   (B) to give information about ant trails

   (C) to show what small creatures look like

   (D) to explain what worms eat

2. What is one thing you should do to take care of the creatures?

   (A) search for them under rocks and stones

   (B) find out all about them

   (C) collect as many as you can

   ✶ (D) put them back where you found them

✶ **Correct answer**

Questions 3-5 are about the Ant Project

3. Why do you put the apple by the ants' nest?

   (A) to block the ants' trail

   ✶ (B) so the ants will make a trail

   (C) to confuse the ants

   (D) so the ants will scurry around

4. Once an ant finds some food, how do the other ants from the nest find it too?

   (A) They watch the first ant and follow it.

   (B) They run around until they find the food.

   ✶ (C) They sense the scent left by the first ant.

   (D) They smell the food on the piece of paper.

5. Why do the ants scurry around after you've sprinkled the soil?

   (1) _____

   _____

✶ **Correct answer**

6. How do pill bugs find the food?

   (A) They walk down the passage.

✶ (B) They sense food with their antennae.

   (C) They follow the scent trail.

   (D) They see the food in the dark.

7. Look at the picture for Study Pill Bugs. How does the picture help you to know what to do in the experiment?

_____

_____

_____

_____

✶ **Correct answer**

8. Why do you need to let your pill bugs walk along the passage before putting the leaves in the box?

   (A) To see if they can learn the maze.

✶ (B) To see what they do when there is no food.

   (C) To see if the box is put together correctly.

   (D) To see which ones turn which way.

9. In Step 3 of the pill bugs project, what do you think will happen if you move the damp leaves to the left corner of the box?

1 _____

_____

10. What is similar in the way ants and pill bugs find their food?

1 _____

_____

✶ **Correct answer**

11. Number the steps in the order you would follow to make a wormery. The first one has been done for you.

_____ put the bottle in the shoebox

__1__ poke holes in the top of the shoebox

_____ drop in the worms

_____ add potato and onion

_____ fill the bottle with soil and sand

12. Explain why it is important to put layers of soil and sand in the bottle.

1 _____

_____

13. Explain why putting the onion and potato on the surface of the soil is important to the wormery project.

14. Each project has *What happens* and *Why* in a separate box. What is the purpose of these boxes?

(A) to explain the steps of the project

(B) to tell you what you need for the project

(C) to tell you what to do when you have finished

✶ (D) to explain what you have seen

15. Which of the three projects did you find the most interesting? Use information from the text to explain your answer.

✶ **Correct answer**

Searching for Food, Item 5

Why do the ants scurry around after you've sprinkled the soil?

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response demonstrates understanding that the ants scurry because they have lost their trail (and therefore have to make a new one) or because they are looking for the food.

Example:

They have to make a new trail.

Searching for Food, Item 7

Look at the picture for Study Pill Bugs. How does the picture help you to know what to do in the experiment?

Process: Examine and evaluate content, language, and textual elements

2 – Complete Comprehension

The response provides an explanation of the necessity of the picture to know how to make the box, to know where to put things in the box, or to know what the box should look like.

Example:

It helps you to understand where you have to put the cardboard strips.

Or, the response shows understanding that it is the visual image of the box that makes it possible to make one the same way.

Example:

It shows what it is meant to look like.

1 – Partial Comprehension

The response describes the features of the picture without indicating how they are useful to doing the experiment.

Example:

It uses arrows and labels.

Searching for Food, Item 9

In Step 3 of the pill bugs project, what do you think will happen if you move the damp leaves to the left corner of the box?

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response provides the appropriate inference from the text that the pill bugs will (eventually) turn to the left toward the leaves. Note that it is appropriate to state that the pill bugs will turn to where the food is or will turn the other way from the original directions in the experiment without having to specifically mention the left corner.

Example:

They will sense the food and find it.

Searching for Food, Item 10

What is similar in the way ants and pill bugs find their food?

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response demonstrates understanding that ants and pill bugs find their food using their antennae or feelers to sense their food.

Example:

They use their feelers.

Searching for Food, Item 11

Number the steps in the order you would follow to make a wormery.

The first one has been done for you.

__ put the bottle in the shoebox
1 poke holes in the top of the shoebox
__ drop in the worms
__ add potato and onion
__ fill the bottle with soil and sand

Process: Make straightforward inferences

1 – Acceptable Response

The response accurately numbers the steps as shown below.

In order to receive full credit, each step must have the appropriate number.

Appropriate Ordering of Steps

5 put the bottle in the shoebox

1 poke holes in the top of the shoebox

4 drop in the worms

3 add potato and onion

2 fill the bottle with soil and sand

Searching for Food, Item 12

Explain why it is important to put layers of soil and sand in the bottle.

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response demonstrates understanding that the effect of the tunneling (the mixing of the soil and sand) will be visible because of the layers.

Example:

To make it possible to see the effect of the worms tunnelling.

Searching for Food, Item 13

Explain why putting the onion and potato on the surface of the soil is important to the wormery project.

Process: Interpret and integrate ideas and information

1 – Acceptable Response

The response provides an appropriate explanation for putting the food on the surface in order for the worms to tunnel up to the top to eat (and tunnel down to avoid the light).

Example:

To make the worms go to the top.

Searching for Food, Item 15

Which of the three projects did you find the most interesting? Use information from the text to explain your answer.

Process: Interpret and integrate ideas and information

2 – Complete Comprehension

The response selects a project with specific information referring to the text, or may provide an inference clearly reflecting specific information in the text.

Example:

The ant project because I would like to see if ants would make a trail with food other than an apple.

1 – Partial Comprehension

The response selects a project and provides a general explanation that is related to the text, but could apply to any of the projects.

Example:

The pill bug project because it would be fun to find them.