

Plants in Our Lawn

Students will learn about some of the plants that live in lawns using the story booklet "Plants in a Lawn" as a model. They will plan how to test this idea by picking leaves of different plants from their school lawn. They will compare their list of plants with the story list to see if they are different and suggest why they might be different.

Driving Question - Are the plants in our school lawn the same as in the story?



Disciplinary Core Idea (DCI) K-ESS3.A Natural Resources - Living things need water, air, and resources from the land, and they live in places that have the things they need. Example: grasses need sunlight so they often grow in meadows - or lawns!

Demonstration of Understanding K-ESS3#1 Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

Science and Engineering Practices (SEP) Developing and Using Models. Use a model (diagram, drawing, etc.) to represent relationships in the real world.

Cross Cutting Concept (CCC) Systems and System Models - Systems in the natural and designed world have parts that work together.

This lesson has 6 parts - Each part (except 4) is intended to take about 20 minutes, though time will vary with student skills and readiness. If it takes two or three periods to work through all the activities in a part, that is ok. If some sections don't take all the time allotted, it is ok to move along to the next part or spend time reviewing or practicing writing and illustrating vocabulary words.

- 1. Get Ready.** Students share what they already know about lawns and learn about some words in the story booklet.
- 2. Ask Questions.** Students listen to "Plants in a Lawn "and answer and ask questions about it. With help, they develop a research question: "**Are the plants in our school lawn the same as in the story?**"
- 3. Make a Plan.** Students, with help, make a plan for investigating the research question by answering **How, When, Where and Who** questions.
- 4. Investigate.** Students carry out their plan. In part 4.1 they collect leaves. In part 4.2 they sort leaves from all the different plants they found. They summarize their results.
- 5. Make Sense of Results.** Students compare the list of leaves from the story booklet with what they found. They decide if the lists are the same, a little different, or very different, and what that means. They learn about systems. This may take two sessions.
- 6. Share Results.** Students create and share posters of their results and what they mean.

Lesson pp. 2-7; Alignments, List of Printables, List of PDFs, Readability, p 8; Printables pp. 9-18

Supplies and Equipment: plastic bags, a sheet or tarp, printable signs and blank paper, story booklet, poster blank, cut outs and blank paper. Optional, pennies to demonstrate scale, newsprint for drying and preserving leaves (flatten leaves between papers, put heavy books on top, keep in dry place 7 days).

The story booklet comes in two forms, a colored version (a separate pdf) and a black and white version to print out and give to students to have and take home (a separate pdf). You can access them for free here - <https://www.youngbirdbooks.com/lessons/lawns.html>

1. Get Ready

Students share what they already know about lawns and learn about some words in the story booklet.

Preparation

- Have the page 1 illustration ready to show on the board.

Show page 1 of the story booklet



1. Ask students what they notice about the picture. Write down the words they say that are used in the story booklet or relevant to the lesson. If they don't mention one of the words below, add it to the list. Ask them to explain what the words mean if they can. If they can't, explain the meanings. Practice saying them.

- lawn - a place with short plants, usually, but not only grass
- lawn mower - a machine that keeps the plants on a lawn short
- plants - living green things that make their own food from sunlight
- leaves - the parts of plants that make the food from sunlight

2. Ask them what else they know about lawns. Ideas they might contribute are:

- where to find lawns - everywhere, usually around buildings
- how lawns are used - to play on
- how lawns are taken care of - they are mowed to keep the plants short
- what lives in lawns - plants, mostly grass, probably bugs and other animals

3. Explain sight words. These are words used in lots of different stories, so it is useful to know them by sight. The sight words in this story are **have**, **like**, and **in**.

Let them know to listen and look for all these words in the story: lawn, plants, leaves, have, like, in

2. Ask Questions

Students listen to the story "Plants in a Lawn " and answer and ask questions about it. With help, they develop a research question: "**Are the plants in our school lawn the same as in the story?**"

Preparation

- Download the colored pdf of the story from <https://www.youngbirdbooks.com/lessons/lawns.html> and have it ready to read.
- Added option, have a toy car handy to illustrate the idea of a model.

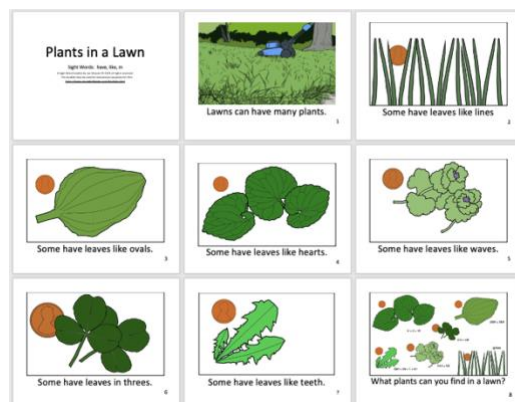
1. Read the story **Plants in a Lawn** aloud, a page at a time, using the colored version projected on the board. Emphasize the vocabulary and sight words you shared with the students in the previous lesson.

2. Then show the picture with all the pages of the book. Ask the students **what** they notice, what things are different from page to page. Note answers on the board with a word or two. Guide students towards these answers

- There is a penny in every picture, but it changes size.
- The leaves have different shapes like ovals, hearts, etc.
- The leaves have different edges, wavy, like teeth, etc.
- other answers...

3. Ask students **what** they wonder or have questions about. Tell them to start their sentences with What or Why. Note the questions on the board with a word or two.

- Why is there a penny in every picture? For scale.
- Why does the penny change size? The smaller the penny, the bigger the leaf - on the last page where every penny is the same size, you can see how big the leaves are relative to each other.
- Why is there a lawn mower? Lawns have to be kept short.
- What happens if you don't mow? Plants grow taller.
- other questions....



4. Introduce the idea of a **model**. A model is a copy of a real-life thing, like a toy car is a copy of a real car.

A model can be a thing, like a toy car. It doesn't have all of the characteristics of the real thing but it is easier to study, ask questions about, and play with. A picture or a story can also be a model.

We just read a story that showed us pictures of plants that live in a real lawn. The story is a model of a lawn. It tells us lawns can have many different plants.

The story asks what plants are in your lawn, so we can ask: **Are the plants in our school lawn the same as in the story?**

In the next lesson they will plan how to investigate if the plants at school are the same as in the story.

3. Make a Plan

Students, with help, make a plan for investigating whether the plants in the school lawn are the same, a little different, or very different from the story by answering **How, When, Where and Who** questions.

Preparation

- slips of paper to put names on, plastic bags to put leaves in

1. **How** can we find out if the plants in our lawn are the same as in the story?

- Ask students to offer suggestions. Note them on the board.
- If they don't suggest collecting leaves from all the different plants they find, ask them what they would do if they had to bring a leaf from home to share in class - they would go pick it.
- Once they understand they can pick leaves, ask them to work out rules for picking leaves - pick leaves from different plants, pick only one leaf per plant, try to get the whole leaf.
- Ask them if they need any tools or supplies - a bag to hold their samples with a label with their name.
- Remind them they are only collecting leaves. They can observe and report on other things, but they should not collect them.
- Ask them how they can use the leaves to figure out what is in the school lawn. Guide them to say: sorting their leaves into piles of leaves that look the same, with leaves from the story in piles separate from leaves not in the story.
- Ask them if they should make a list of what they found using words or pictures - yes!
- Ask them how to handle leaves not in the story booklet - they can call them leaf 1, 2 3, etc.

2. **When** are we going to do the collection?

- Ask students when they should collect - a nice day, when the lawn is not too wet.

3. **Where** are we going to collect?

- Ask them for suggestions about where to pick. Ask if they should pick on sunny spots, or shady spots or both. Tell them you will find an area for them based on their suggestions.

4. **Who** is going to do what?

- Students will do the collecting, sorting, and list making (with help)
- You will provide bags for them to collect leaves in.
- You will decide if it is nice enough to collect.
- You will pick the places to do the collection based on the students' recommendations.
- Decide if you want them to work individually, in pairs, or in small groups. Give some thought to how you can quickly direct students to places and keep them spread out - mark places ahead of time, make a map, or give really clear directions.

If time and student skill permits, have students write their own names on slips of paper and put them in the plastic collecting bags. Gather the bags from the students.

Note: On the day of collection, try to give them time to run around and blow off energy outside before they do the investigation.

4. Investigate

Students carry out their plan. In part 4.1 they collect leaves. In part 4.2 they sort leaves from all the different plants they found. They summarize their results.

Part 4.1 Students collect leaf samples

Preparation

- Give each student a small plastic bag labeled with their name.
1. Students go outside and collect leaves at the assigned places for the assigned time.
 2. They go back inside. If the lesson time is over for the day, collect the bags.

Part 4.2 Students sort leaves

Preparation

- Make signs by printing a picture of each of the 6 kinds of leaves (pp 11-16) on a separate sheet of paper. Make six more signs numbered 1 - 6 for students to put leaves different from the story on.
- Spread out a tarp or sheet and place the signs around its edge.

1. Give each student their bag. Have them sort story leaves first.

2. For leaves not in the story, students should sort leaves onto numbered sheets, aiming to get one kind of leaf in each pile. This will involve some moving, combining, and separating piles. Let them make mistakes without correction but ask them to justify their choices. Let this activity go on as long as it is productive.

3. Have students get in groups. Give each group one pile of leaves not in the story. Split piles up if there are not enough different leaves, give some groups two piles if there are too many.

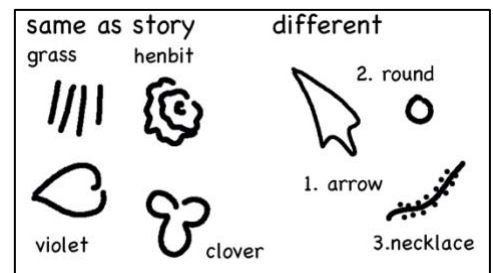
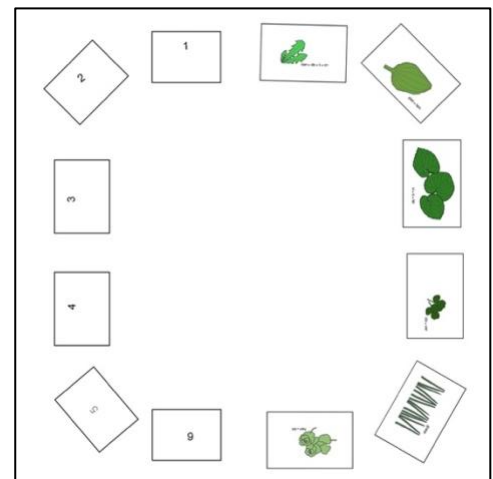
4. In each group have as many students who want to, trace or draw a picture of the leaf on a blank sheet of paper. Have the group work together to give the leaf a descriptive name.

5. While the students are completing this task, draw a cartoon of the story plants they found on the board under the title "Same as story".

6. Collect the pictures from each group. Make sure they have a name and number.

Draw a cartoon (based on student drawings) of each distinct leaf under the title "Different".

Once all the tables have shared and the data is on the board, take a picture of the board for the next lesson.



5. Make Sense of Results

Students compare the list of story leaves with the list of school leaves. They decide if the lists are the same, a little different, or very different, and what that means. They explore the idea of systems. This may be done in 2 parts.

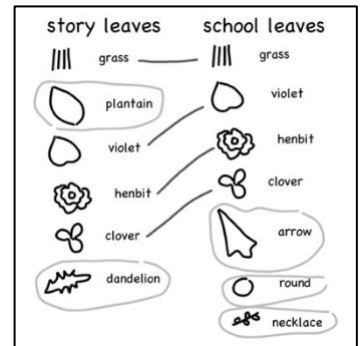
Preparation

- Draw a table on the board with the headings, story leaves and school leaves. Under story leaves, draw cartoons of the plant leaves in the story with their names. Under school leaves, draw cartoons of all the plants the students found, both the story leaves and ones different from the story.

Part 1

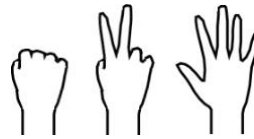
1. Show the students the table you made. Explain that putting the pictures of the leaves in columns helps when you have to compare things.

2. Ask them to tell which things are the same in the columns. Connect these with lines. Then ask them to tell which things are different. Circle these with a different color of marker. Count how many things are the same (4) and how many are different (5). Write these numbers on the board.



3. Based on the table, ask if they think the school lawn **is the same, a little different, or very different** from the story lawn. Then have them use a "Hidden Code" by holding their hands to their chests and making the signs.

- the school lawn is the same as the story - a fist
- the school lawn is a little different - two fingers
- the school lawn is very different - an open hand



This "Hidden Code" will help them learn to figure out what **they** think about a question instead of looking to others. It may take some practice.)

Tally the answers. Ask one student from each group what evidence or facts they have for their choice.

Part 2

1. Explain about systems. When different things work together, or affect each other, we call that a system. The lawn system has plants, a mower, sun, soil, rain, seeds that blew in, and how it is used.

Draw a cartoon (1) of grass, plantain, and the mower. Explain that the size of the arrow tells how much one thing affects the other. The arrows from the mower to the plants are bigger than from the plants to the mower, because the mower affects the plants more. The arrows from one plant to another are about the same. If you take the mower away (cartoon 2), then the grass may grow taller than the plantain. It can take more water and sunlight from the plantain so the plantain's new leaves will be smaller (cartoon 3). If you change conditions in a system, other things will change.



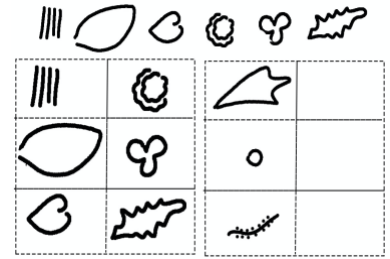
2. Tell students if the plants at school are different from the story, then conditions in the system are different. What are some things that might be different in their school lawn? Sun, soil, rain, seeds, and how it is used - kids playing on the lawn a lot. The plants have to be extra tough!

6. Share Results

Students create and share posters of their results and what they mean.

Preparation

- Use the master on p. 18. On the left are cartoons from the story. Cross out any your students did not find. On the right add cartoons of the ones they did find. Make a copy for each student. This is a summary of their results that they can use to fill out their poster.



Lead a discussion to prepare students to fill out their results in a poster.

1. Ask students "What was the question the class tried to answer?"

Question: Are school plants the same as story plants?

Students should cut out and paste in the top line of leaves from the lawns poster cutouts plants. These are the story plants, the model.

2. Ask students "How did they investigate the question?" (Part 3)

Investigation: We picked _____ from plants.

Students should write the word leaves in the blank.


3. Ask students "What did they find?" (Parts 4 & 5)

Results:

Students should draw or cut out the cartoons of the plants that they found in the school lawn and paste them in the correct column. The left column is for plants they found that were the same as in the story, the right column is for plants that were different.

Name Jan








Question: Are school plants the same as the story plants?



Investigation: We picked leaves of plants.

Results

Same as story plants	Different from story plants
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grass 	henbit 	2. round 
violet 	clover 	1. arrow 
		3. necklace 

What it means: I think school plants are

the same	a little different	very different
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Why? Because of these conditions

Sun	Soil	Rain	Seeds	Use
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4. Ask students "What does it mean?" (Part 5)

What it means: I think the plants were the same/a little different/very different.

Each student should circle the answer, the same, a little different, or very different, that they agree with.

It is ok if different students circle different answers, but they should be able to explain why they did so.

5. Ask students "Why is the school lawn the same or different" (Part 5)

Why? Because of these conditions.

Each student should circle the things they think might be the same or different - sun, soil, rain, seeds, use.

They can circle 1,2,3, 4 or all 5 or none. Each one they circle is a question for a future investigation.

Follow up questions -

Do they think they would get the same results if they looked in a different part of the school yard? What could they do to find out?

Are the plants in the lawns where they live the same or different? Why or why not?

Give each student a copy of the black and white line drawing booklets to keep and color for their own.

Alignments

- 1. Get Ready.** Students are obtaining, evaluating and communicating information, and developing and using models (NGSS-SEP*), understanding spoken words and high frequency words, making connections between words and use (CC ELA), Engage, Explore (5E)
- 2. Ask Questions.** Students obtaining, evaluating and communicating information, are asking questions and defining problems, and developing and using models (NGSS-SEP). They are becoming familiar with print concepts, understanding spoken words, high frequency words, identifying key ideas and details, integrating knowledge and ideas and engaging in group reading with comprehension and purpose (CC ELA), Engage, Explore, Explain (5E)
- 3. Make a Plan.** Students are planning investigations (NGSS-SEP). They are using words and phrases acquired through conversations and reading (CC ELA). Extend (5E)
- 4. Investigate.** Students are carrying out investigations. (NGSS-SEP). They are sorting objects, making connections between words and use, using words and phrases acquired by conversations and reading, and asking and answering questions (CC ELA). Extend, Explore, Explain (5E)
- 5. Make Sense of Results.** Students are analyzing and interpreting data, constructing explanations, and engaging in argument from evidence (NGSS-SEP). They are sorting objects, making connections between words and use, using words and phrases acquired by conversations and reading, and asking and answering questions (CC ELA). They are representing objects with written numbers, counting to answer how many, comparing counts, and classifying objects (CC M). Explain, Extend, Evaluate (5E)
- 6. Share Results.** Students are constructing explanations, engaging in argument from evidence, and obtaining, evaluating and communicating information (NGSS-SEP). They have an opportunity to write information text, recall from experiences to answer a question, ask and answer questions, present information, add drawings, and express thoughts, feelings and ideas clearly (CC ELA). Explain, Evaluate (5E)

Printables in Lesson Packet

Picture of a Lawn (part 1) p. 9

Picture of all the pages of the story booklet (part 2 for discussing the story) p.10

Leaf signs (part 4) pp. 11-16

Lawns Poster - (part 6 for students to fill in by drawing, coloring, or pasting images into) p.17

Lawns Poster Cut Outs - (part 6, for students to cut and paste onto the poster) p. 18

Separate PDFs

Story Booklet - colored in (for part 2 for reading to whole class) pdf

Story Booklet - black and white line drawings (for students to have, color, take home) pdf

Words and Readability Statistics

49 words; 19 unique words; 2 decodable words (can, a); 3 sight words (have, like in); 14 vocabulary words (lawns/lawn, many, plants, leaves, lines, ovals, hearts, waves, threes, teeth, what, you, find)

Flesch reading ease - 100; Flesch-Kincaid grade level - 0

*NGSS - SEP stands for Next Generation Science Standards - Science and Engineering Practices

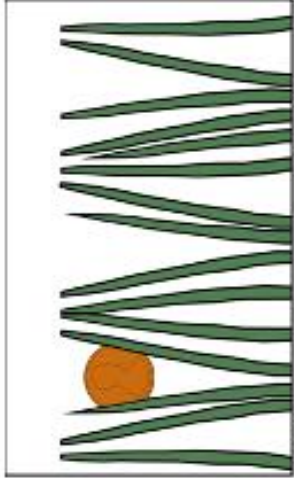


Plants in a Lawn

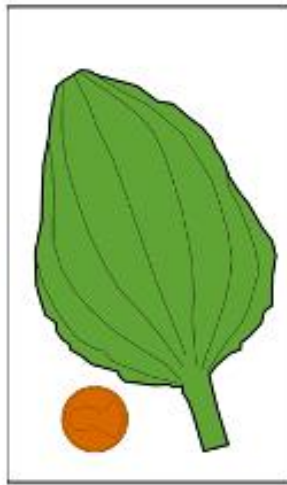
Sight Words: have, like, in
A Sight Word is highlighted by two Wonders. © 2020 All rights reserved.
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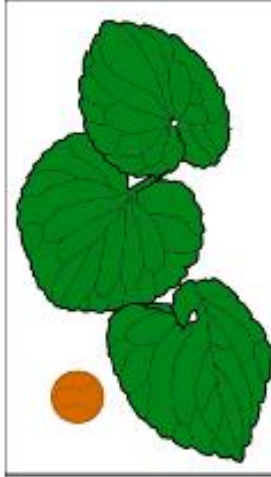
Lawns can have many plants. 1



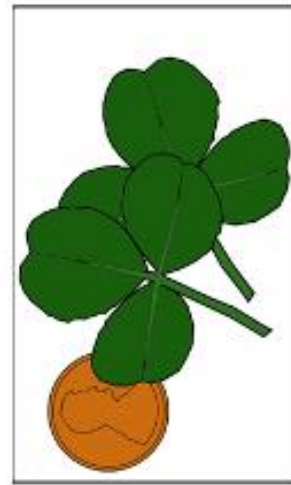
Some have leaves like lines. 2



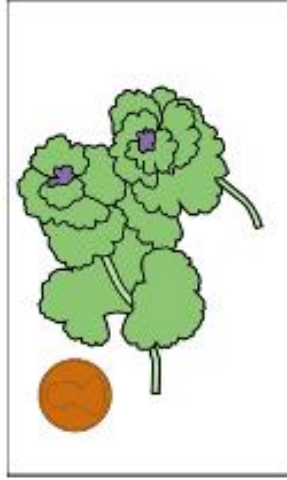
Some have leaves like ovals. 3



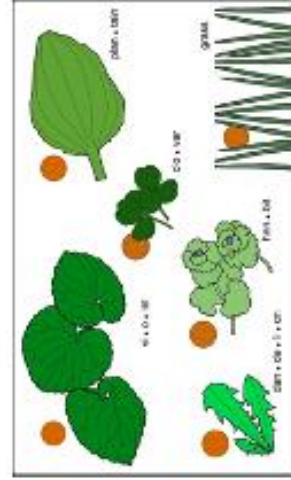
Some have leaves like hearts. 4



Some have leaves in threes. 6

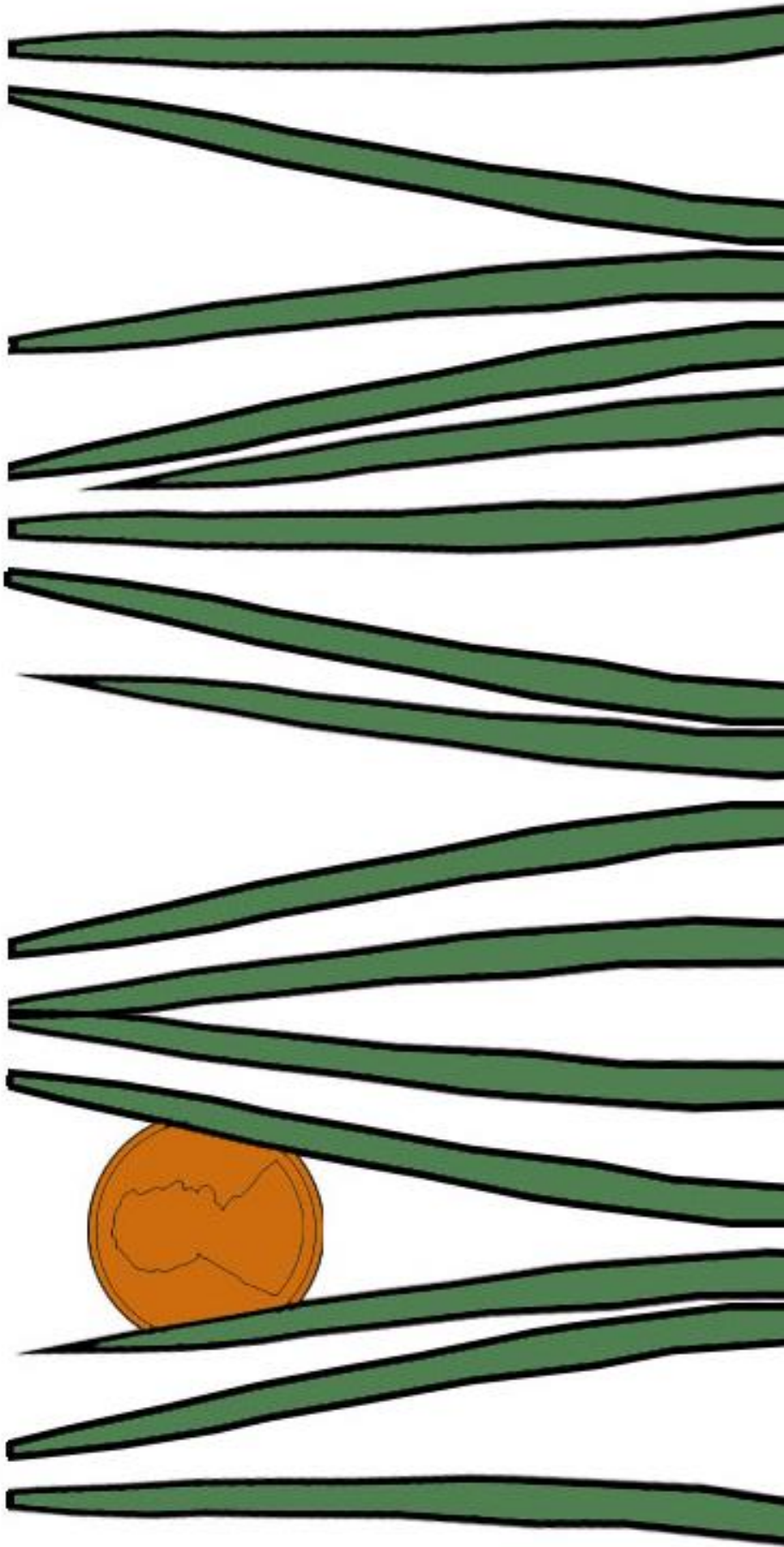


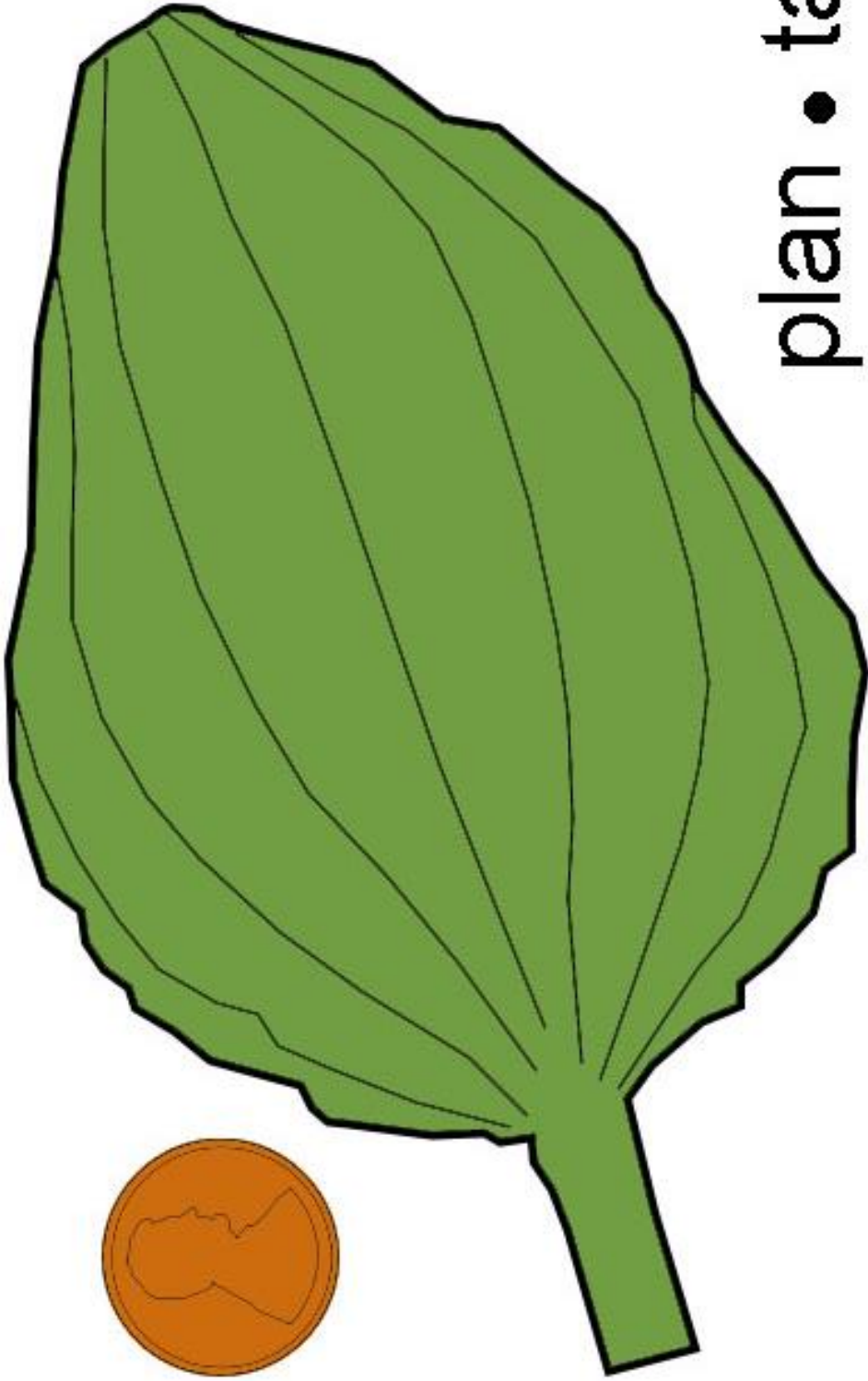
Some have leaves like waves. 5



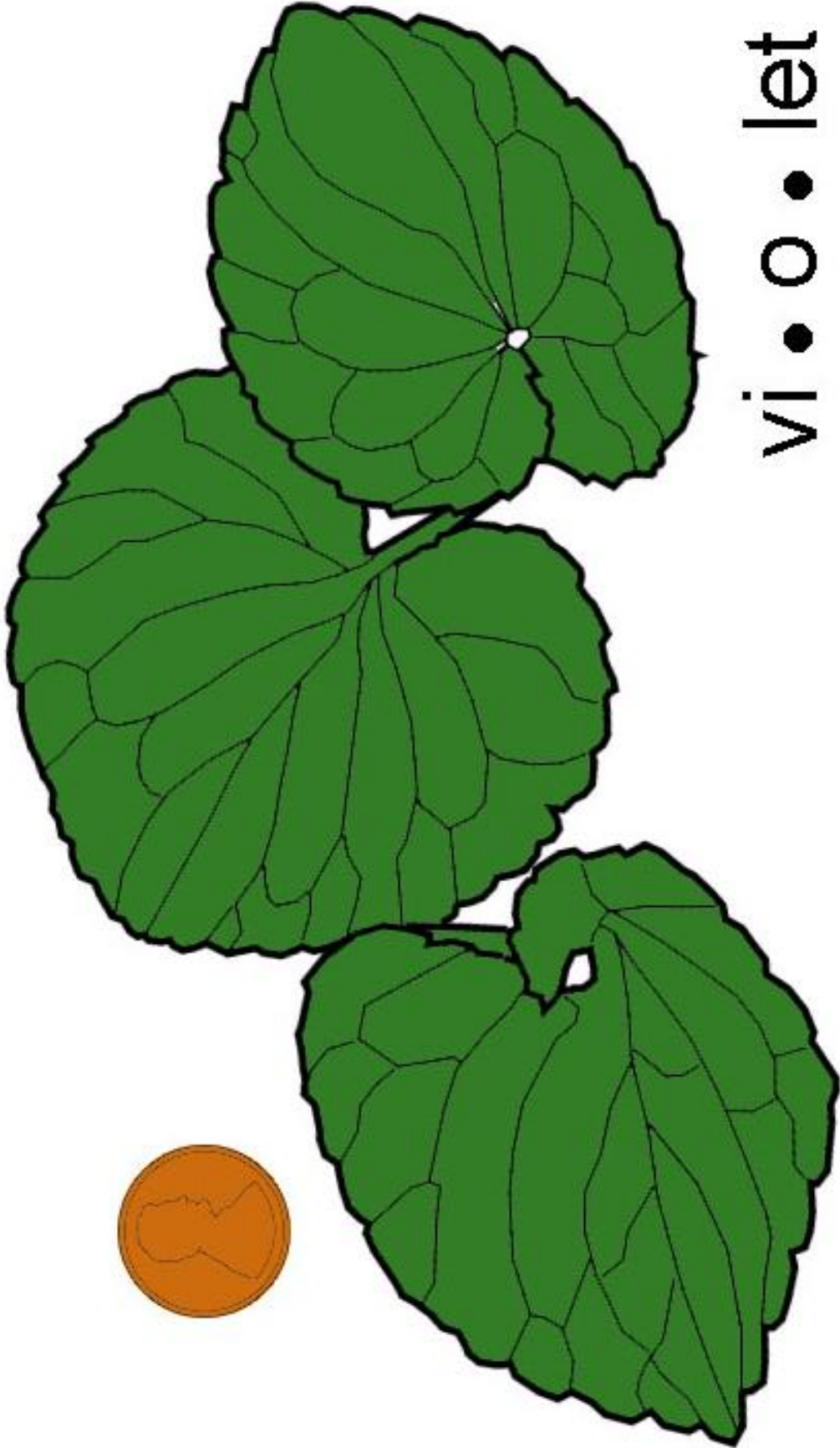
What plants can you find in a lawn? 8

grass

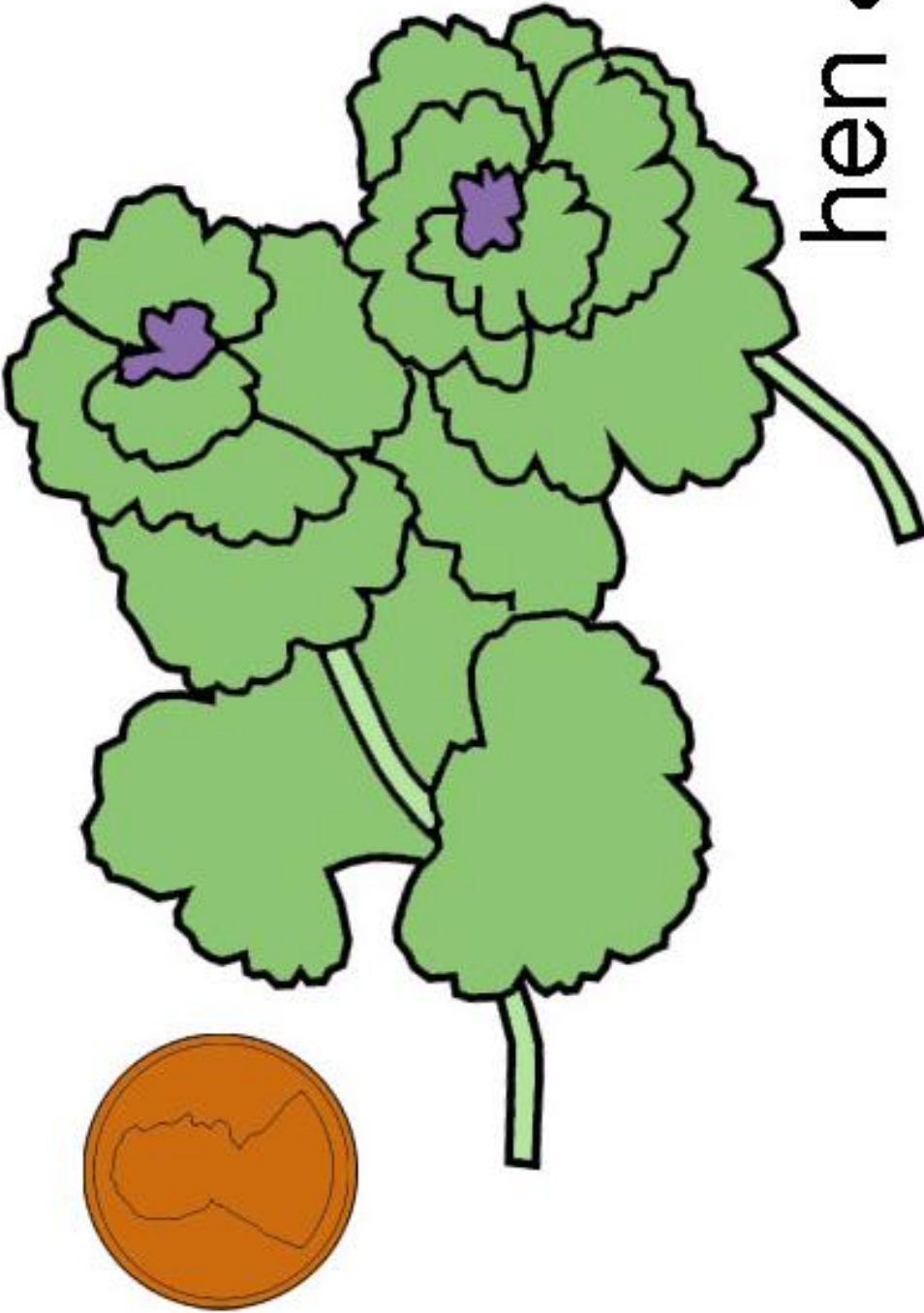




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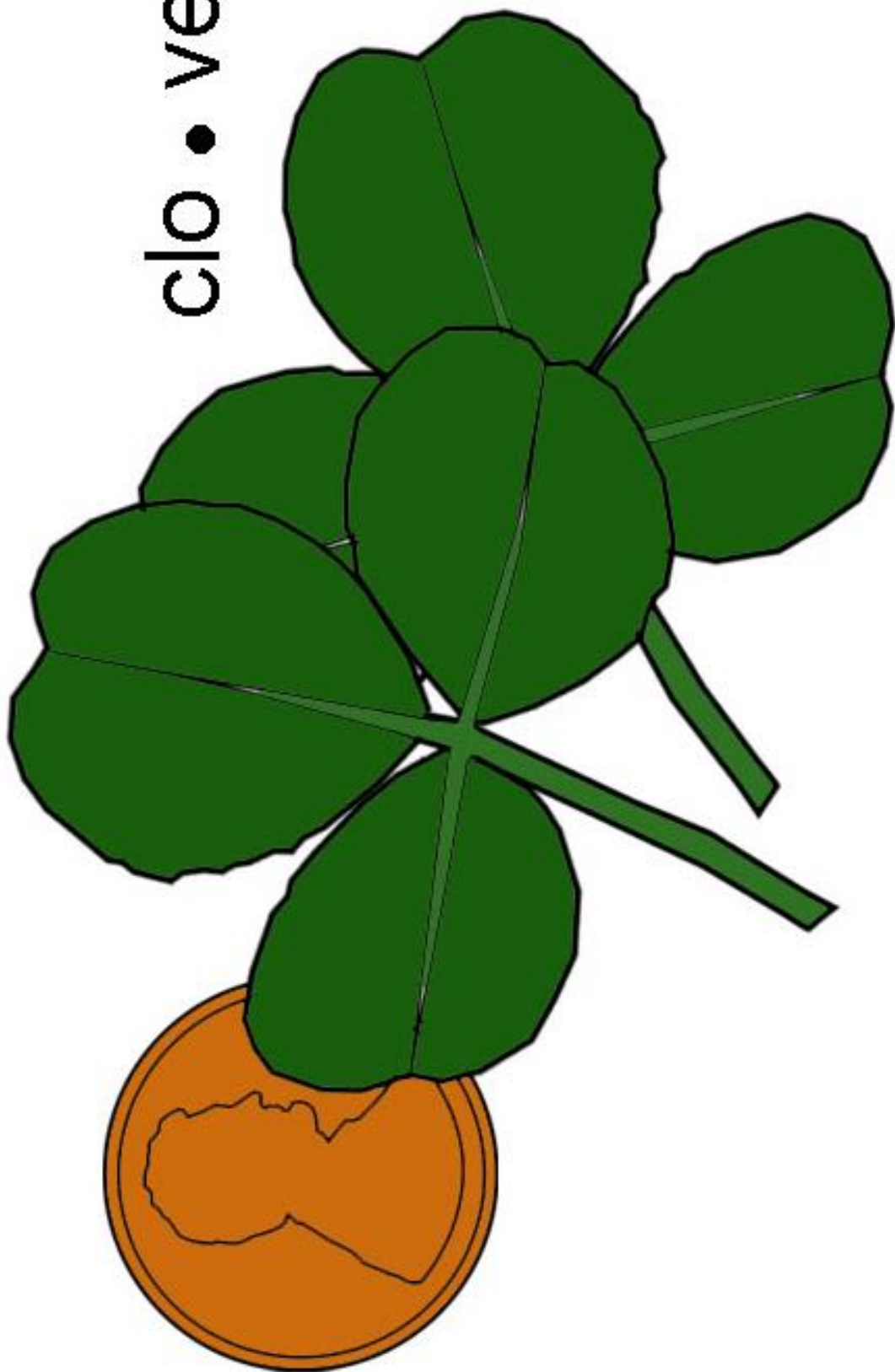


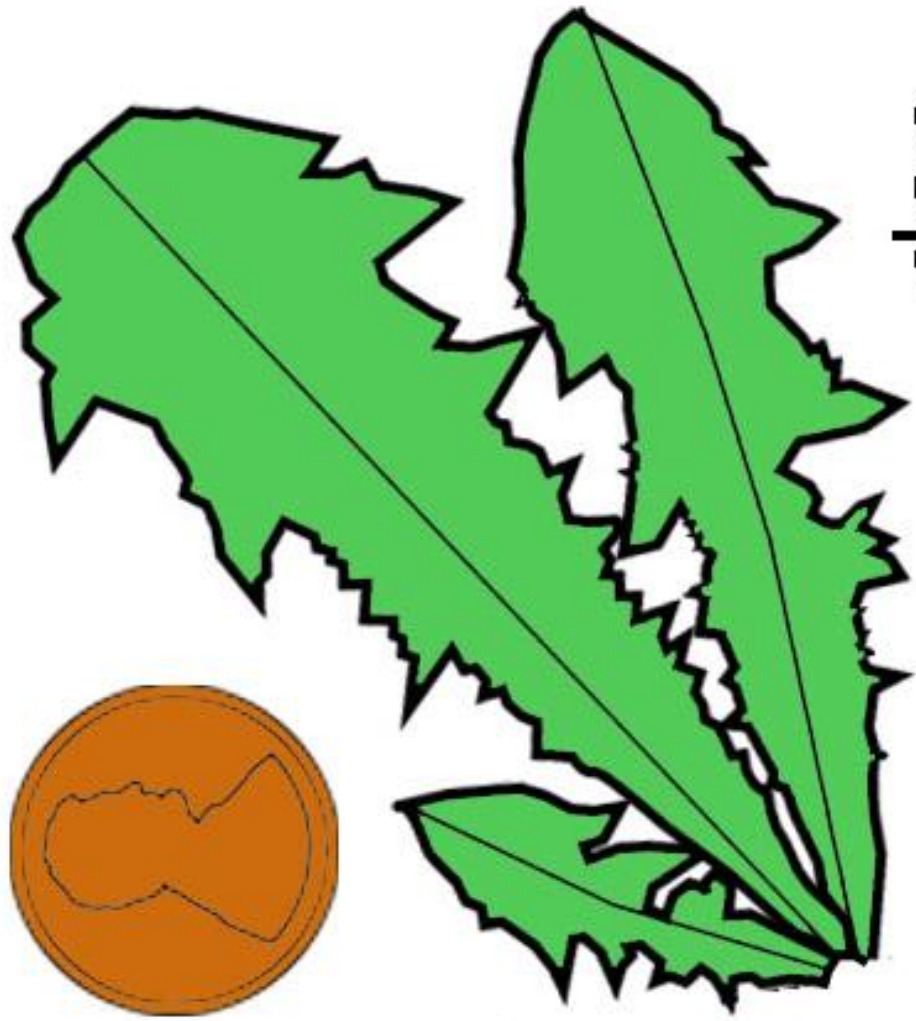
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Name _____

Question: Are the plants in our school lawn the same as in the story?

Investigation: We picked _____ of plants.

Results:

Same as story plants

Different from story plants

What it means: I think school plants are

the same

a little different

very different

Why? Because of these conditions.

Sun







Soil

Rain







Seeds

Use



 grass	 henbit		
 plantain	 clover		
 violet	 dandelion		



 grass	 henbit		
 plantain	 clover		
 violet	 dandelion		