

ORGANISMS

aka Living Things



Kit # 51

This presentation references the Lessons and pages in the Organisms Teacher Guide, giving clarification and suggestions as we perceive may be helpful. There may be web or video links.



p. 6: Important Information on Live Materials

Good information – contact the **Science Center** to order your critters and plants NOT Carolina Biological

Email: mst@ocmboces.org Phone: 315 433-2671

P. 7 – 13: Teaching Organisms

Good introduction to the unit.

Discusses

- Teaching strategies
- Materials (use our packing list as a guide to the materials provided)
- Assessment

HeadsUp



Live Organisms: Set up an aquarium at the start so you'll be ready for arrival of water critters/plants.¹

(The terrestrial plants can hold out for a few days in the original packing. Any longer than that a terrarium should be set up to hold them until the kids are ready for them.)

Ordering: Order at least 1 week ahead of time before Lesson 4. You can split the order and receive your plants first for Lesson 4 & 5 and then the animals for Lessons 7 - 10.

Classroom Set Up: This depends on your room/grade level setting. If you decide to set up less environments, don't over populate the organisms.

¹ Use "Aged" or de-chlorinated water for aquariums and to water the terrariums: You can age water or add tap water conditioner to a bucket of water (1/8 tsp/ 2 gal water).

[Video: Aging Water](#)

Lesson Plan Structure

- **Overview and Objectives** (check the Kit's Teacher Information Packet for the NYS Elementary Level Science Standards)
- **Background**
- **Materials** (check the Kit's Packing List for a list of materials provided)
- **Preparation**
- **Procedure** (with Management Tips)
- **Final Activities**
- **Extensions**
- **Assessment**

Sharing what we know about Organisms

What is an organism?

What do we know about organisms?

What would we like to know about organisms?

Student Page:

My Living Thing

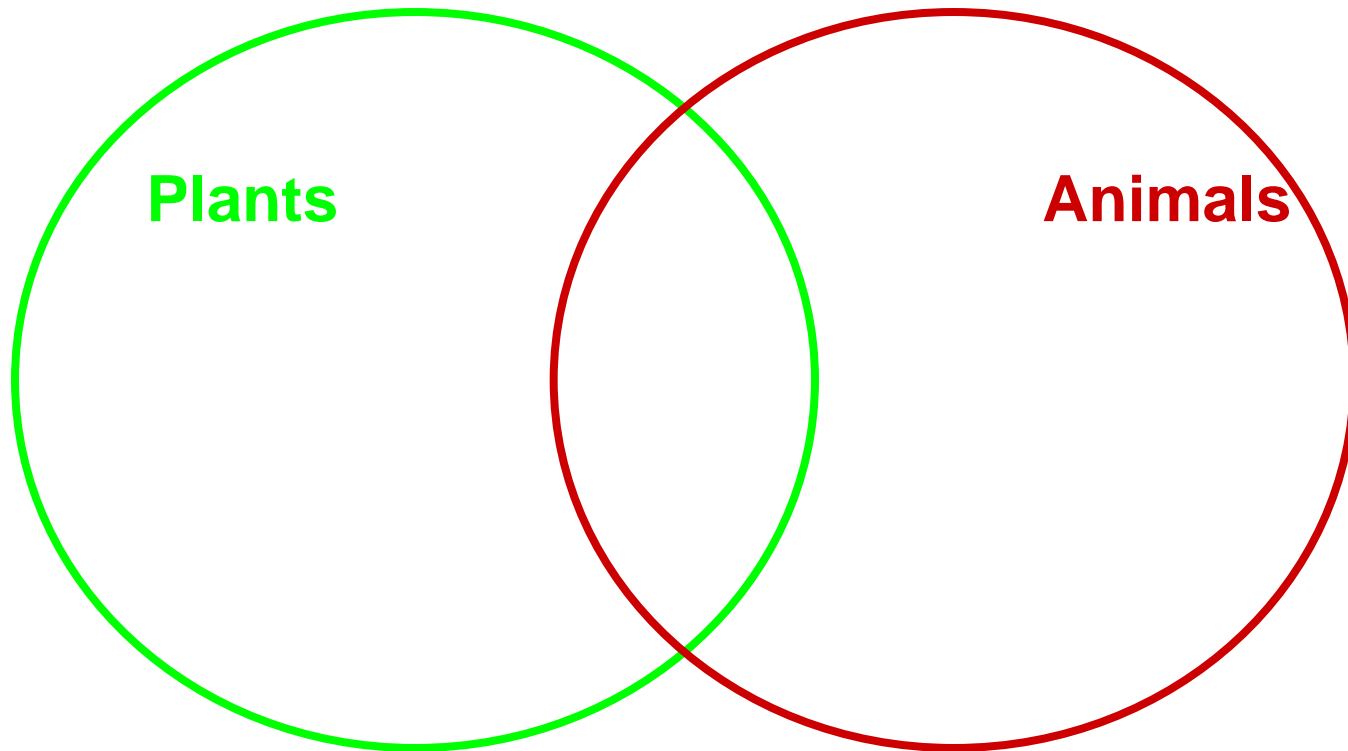


"Whatever's in that bush is none of our business."

Use as an introduction and a pre-assessment – your students should have discussed living and non-living as part of the Kindergarten Plants and Characteristics of Animals kits.

Record Sheet 1A

How can we use a graphic organizer to share what we know about living things?



Class sharing using a graphic organizer.

Observing and Describing Seeds

What are Seeds?

How can we find out about these seeds?

(How do we learn about something?)



Observing



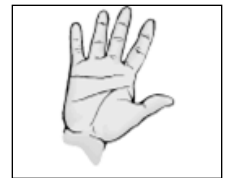
How are seeds alike?

How are seeds different?



Make Observations

Record observations.



Observing Chart



What color is it?
What shape is it?
How big is it?



How does it sound?



How does it feel?



What does it smell like?

p. 26 step 2

The Observing Chart can be a poster hung up on a wall, bulletin board or electronically shared on a smart board.

The objective is to use it as a reference tool whenever students are asked to make observations.

Be sure to demonstrate how scientists “smell” objects. (p. 29, Fig. 2-3)

Planting our Seeds

What does a Seed need to grow?

Predicting

Planning

Observing

Recording

Use the Planting Table on p.36 as a guide to “How” and “When”.



Look ahead to Lesson 6: “How have our seeds changed?”

Will you use the Planting Cards (p.45) → to create a Planting Book (p.79)?

Planting Seeds - modifications

DO NOT try to put holes into the bottom of each planting cup as directed (p. 38 Prep step 4).

We do NOT provide:

- 4 pails
- China markers or planting labels
- planting rings or planter tray
- colored plates and colored dots

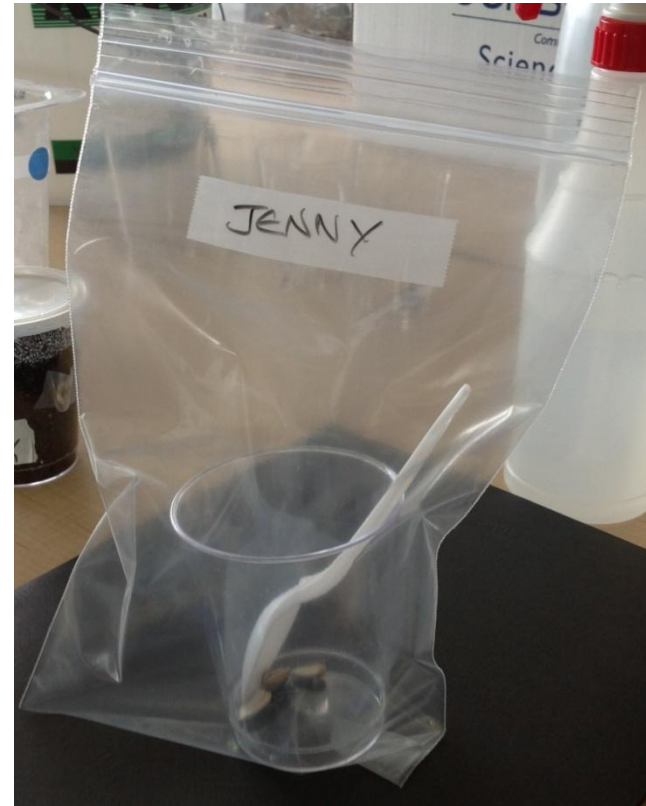
Modifications:

Use the terrariums or aquariums as “pails” to hold planting soil.

Mark items using tape and marker.

Use a copier box top lined with a plastic bag for the planter tray.

Rather than color coding - We would suggest that, once the seedlings get their true leaves, the students try to “match up” with other students that have the same plant. This would reinforce the concepts that “offspring of similar living things have shared characteristics”.



An option: Using Individual Student Planting Bags
p. 39

Planting Seeds – plant care



Seed Growth: Seeds need enough water to soften the outer seed coat so that the plant knows that it is time to “come out”. Therefore, dry soil is not a good environment. (Seeds do not need light but warmth is a plus.) One way to keep plant soil moist is to keep adding water (but what do you do on weekends?). The other is to reduce water loss due to evaporation – so an option is to capture the water by covering up. One way to do this is to cover the planted cup with a plastic bag. Other ways are to ... [view video]

Are you going to ask your students to bring in “leaf litter” for Lesson 4?

[Video: Plant Tips](#)

[Video: Class Planter Tray](#)

Observing Woodland Plants

How do I set up a place for plants and animals to live?

Check on the seeds.

Time to set up the Terrariums! p. 53-54

Hopefully your plants have arrived – if not, work on Lesson 6 (How Have Our Seeds Changed?)

Materials:

- **Large terrariums** with dome covers
- **Gravel**
- **Soil - moist** (use aquariums as supply “buckets”)
- **Cups** (small 5 oz. cups for scooping gravel and soil)
- **Leaf Litter** (can substitute paper towels)
- **Newspaper - Optional** (to cover tables/desks)

Sun: Place the terrarium in a sunny spot – be careful of over heating if you have a very sunny window.

Please use tape to mark containers, not china markers or permanent markers. Remove tape when done.

Gravel and Soil
Guidelines:

- Gravel –
three 5 oz. cups
- Soil -
five 8 oz. cups
OR
seven 5oz. cups

[Video: Setting Up the Terrarium](#)

[Video: Watering the Terrarium](#)

Lesson 4

**What do I observe about Woodland Plants?
How are woodland plants the same? Different?
What do they need to live?**

Observe

Moss



Conifer seedling



Observe
Draw
Describe
Compare

Compare/Contrast



You need to
“age” water
for/in the
aquariums.

[Video: Aging Water](#)

[Comparing Woodland Plants Video Lesson](#)

Observing Freshwater Plants

How do I set up a place for plants and animals to live?

Check on the seeds.

Time to set up the Aquariums! p. 68-69

Hopefully your plants have arrived – if not , work on Lesson 6 (How Have Our Seeds Changed?)

Materials:

- **Aquariums** with flat covers
- **Aquarium stone**
- **Aged or treated water**
(1/8 tsp. / 2 gal. water)
- **Elodea and Cabomba**
- **Tape and marker**

Please use tape to mark containers, not china markers or permanent markers.
Remove tape when done.



This is really easy to set up. You can try to “plant” the Elodea in the gravel, as it will root, but don’t let it make you crazy. Sometimes they just don’t cooperate. Often Elodea will send out roots even if they are floating. Cabomba is more of a floater.

Lesson 5

What do I observe about Freshwater Plants?
How are fresh water plants the same? Different?
What do they need to live?

Observe



Elodea

Observe
Draw
Describe
Compare

Cabomba

Sun: Place the aquarium in a sunny spot – be careful of over heating if you have a very sunny window. You can check the water temperature (kit thermometer strip) – keep $<80^{\circ}\text{F}$ (range $70 - 80^{\circ}\text{F}$)

How have our seeds changed?

Sharing Plant Observations



Compare/Contrast

This lesson gives students an opportunity to express their learning. The mode of expression can be coordinated with your ELA goals. Math standards in regards to measurement should also be integrated.

Observing Freshwater Snails

What do I observe about freshwater snails?



Observing

Observe
Draw
Describe
Compare



Food: Once the aquarium has been sitting for a week (in partial sun) there may be some algae growing on the sides of the container for the snails. You may also find the snails on the plants.

If you would like to help the snails along by adding an additional food source, add a small piece of wilted lettuce anchoring it down with some stones. First wilt the lettuce by soaking it in hot water for a few minutes.

Observing cups: p.91-92

You can utilize the 5 oz. cups although they are not clear. Much of the student observations will be made of the snails in the aquariums – as they explore their new home. (Use hand lenses.)

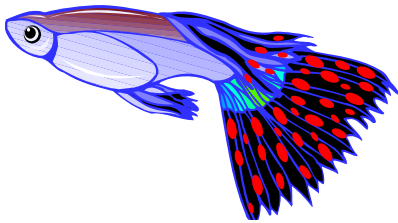


See **p. 89-91** for background info on snails

Observing Guppies

What do I observe about guppies?

Observe



Male – Female
note the
darkened area
(gravid spot)
which indicates
pregnancy

Compare/Contrast

Observing cups: A guppy can be placed in a 5 oz. cup so that students can make observations. Your selection of guppies will be a mix of males and females.

Food: The guppies do not need to be fed – they will eat off of the plants. If you think that the plants are being “overly grazed” there is fish food provided in the kit. Feed sparingly, less is better (super sizing is not healthy).

Lesson 8

How do guppies compare with the snails? What do they need to live?



Compare/Contrast

LESSON 8

Figure 8-5
Comparing the snail and the guppy

Move the two sheets together so that the circles overlap, creating an intersecting space. Tape the sheets together.

Trace over any circle parts and words that are covered. This will outline the intersecting center space.

STC / Organisms

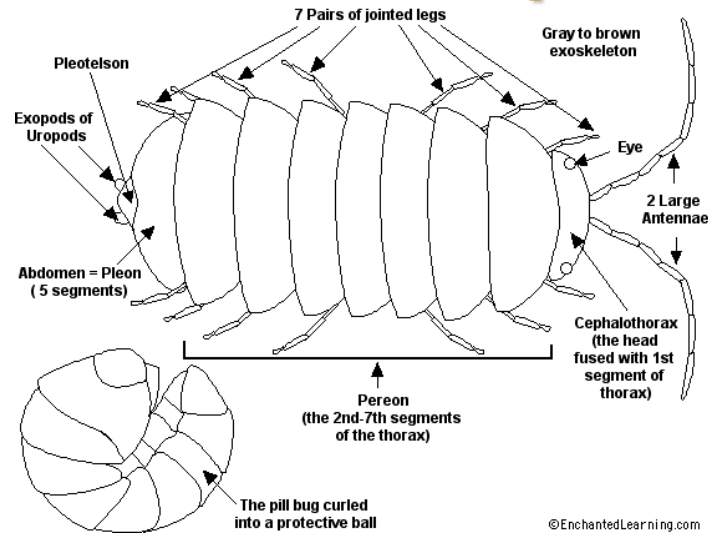
Observing Guppies: How Do They Compare with the Snails / 107

Interesting use of Venn Diagrams – see p.107

Observing Pill Bugs

What do I observe about pill bugs?

Observe



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Observing cups: p.91-92

The Pill bugs will arrive in a plastic cup with some paper toweling. They can be placed into the bucket with some soil until you are ready to do observations. For making observations, you can utilize the 5 oz. cups and choose to set up mini-terrariums as indicated on p. 112-113. You can also choose to have the students do initial observations in the cups (without soil ...) and do the rest within the terrariums. Students may have to do a bit of “pill bug hunting” within the terrarium. (Use hand lenses.)

Food: Small pieces of organic matter can be added to the bucket such as leaf litter, or small vegetable scraps (apple peel, carrot slice, potato slice).

Plastic spoons:
The plastic spoons that come in the kit make excellent pill bug movers.

Lesson 9

Observing Pill Bugs

What do I observe about pill bugs?



Observe



[Video: Pill Bugs](#)

Food and shelter: After you add the pill bugs, add some moistened leaf litter or small pieces of decaying (softened, moistened) pieces of wood. This will provide food for the pill bugs and a place to “hang out”.

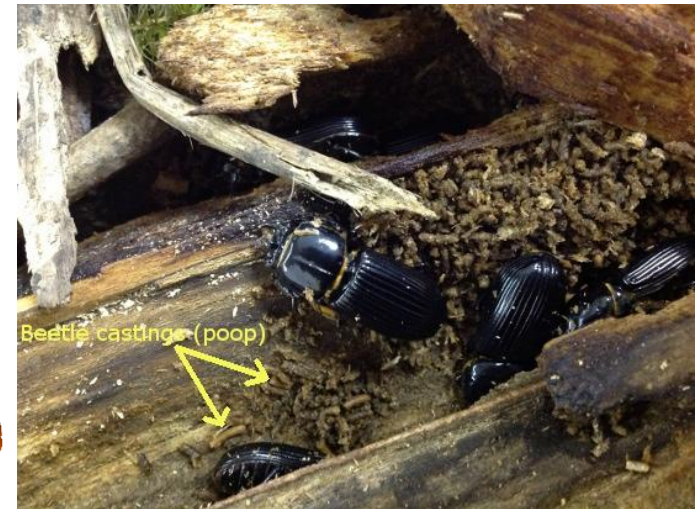
Observing Bess Beetles

What do I observe about Bess Beetles?

The good, the bad and the ... loveable?



"Don't worry. He just looks like he could eat you."



The Bess Beetles will arrive in a plastic container (like a food take-out container) with some paper and wood chips. You can place them in the large bucket with the wood chips on a thin layer of soil to hold them for observations. The PLASTIC SPOONS, in the kit, make excellent Bess Beetle movers.

Background Info – p.119-120

[Critters in the Classroom Video: Bess Beetles](#)

Lesson 10

Observing Bess Beetles What do I observe about Bess Beetles?



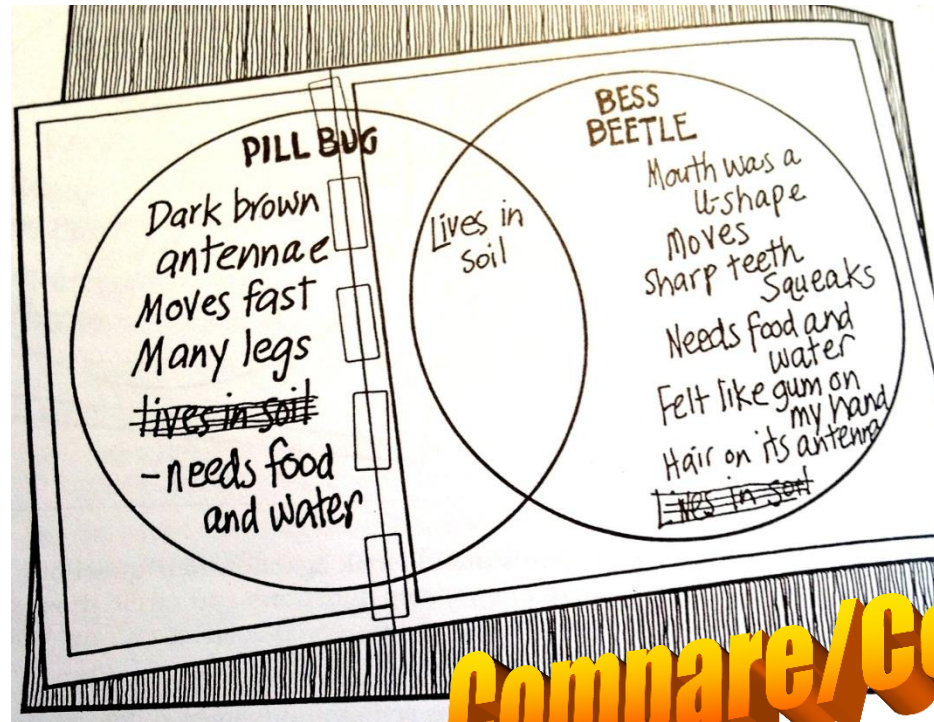
Bess Beetles are docile, in spite of the “hissing” noise they can make, and do not use their mandibles for defense (pinching).

Beetle Handling: Bess Beetles are relatively easy to handle, You can grasp them between the first and second pair of legs or you can use the spoon method of moving them. Be cautious of your students handling the Beetles, in that, they have very tiny grasping “feet” and can cling onto skin. A student may panic when it is difficult to remove the beetle and may harm the beetle (or have a melt down). The suggestion is to allow the beetle to crawl off to a new location. (Vinyl gloves are provided in the kit, if needed.)

FOOD: Bess Beetles break apart and ingest decaying (softened) wood, especially hard wood such as maple and oak, not pine. To do this, they use the sturdy front mandibles (pinchers that don’t pinch). The Beetles should arrive with some wood chips, finding and providing extra would be helpful – got any woods nearby?

Lesson 10

How do Bess Beetles compare with the pill bugs?
What do they need to live?



Compare/Contrast

Lesson Info – p.128-129

Lesson 11
p. 133-138

What's Happening in the Aquarium?

Observe



Sharing Observations

Lesson 12
p. 141-145

What's Happening in the Terrarium?

Observe



Sharing Observations

Freshwater and Woodland Plants

How Do They Compare?

Sharing Observations



Compare/Contrast

Informational Text: Four Amazing Plants p. 155

[Comparing Freshwater & Woodland Plants Video](#)

Lesson 13

What is the Same?

Woodland plants

Freshwater plants

Green, brown

Food and Water

Air (CO₂, O₂)

Light

Living (grow)

Place to live

Can die

Make more (seeds)

Freshwater and Woodland Animals: How Do They Compare?

Sharing Observations



Compare/Contrast

Lesson 14

What is the Same?

Woodland animals

Freshwater animals

Grow

Food and water

Air (O₂)

Living

Place to live

Can die

Have babies

Move

Eat

How are our Plants and Animals alike and different?

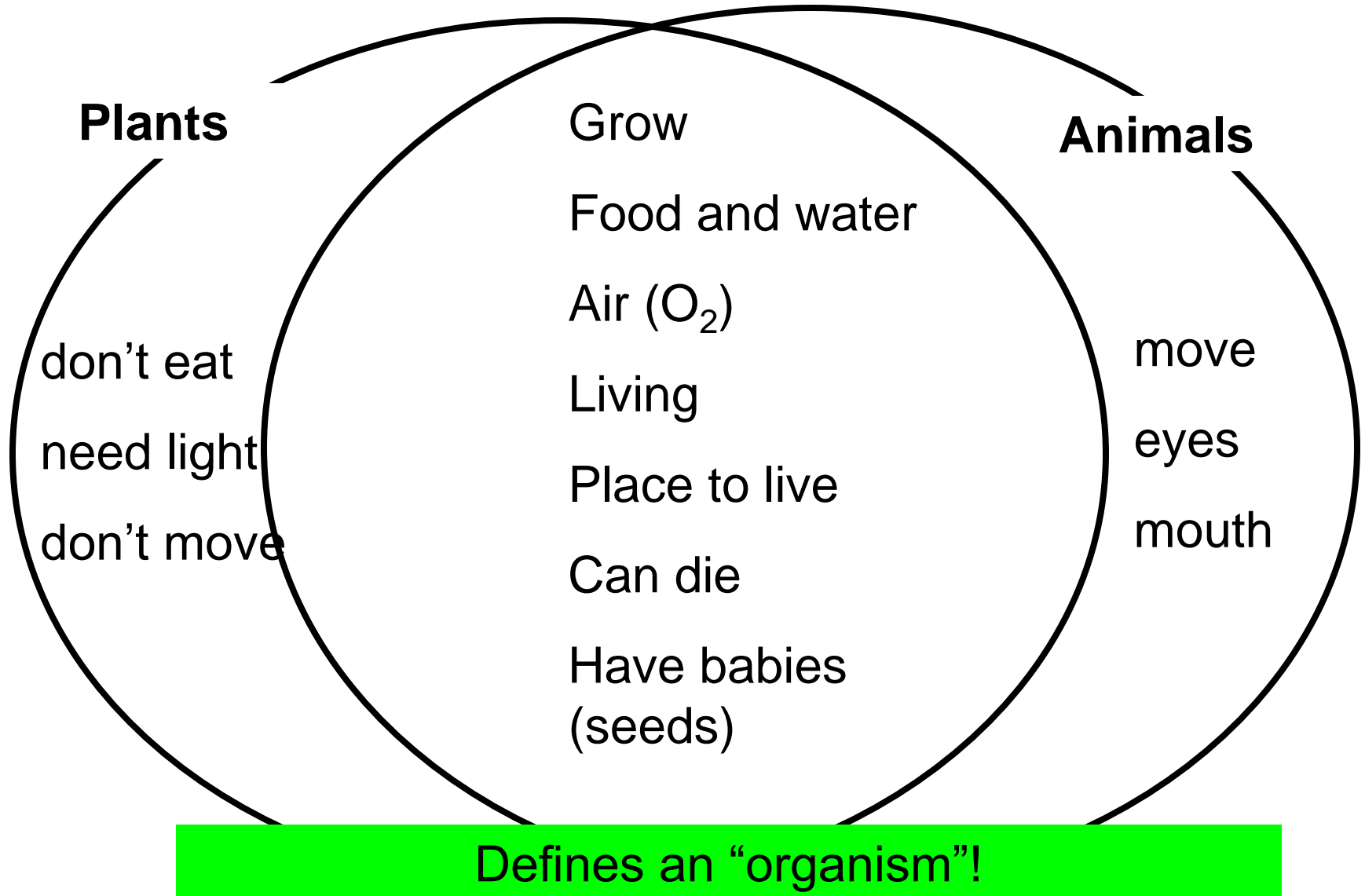
Sharing Observations



Compare/Contrast

Lesson 15

What is the Same?



Taking a Look at Ourselves



Are we organisms?

Lesson 16

What is the Same?

ORGANISMS

Grow

Food and water

Air (O₂)

Living

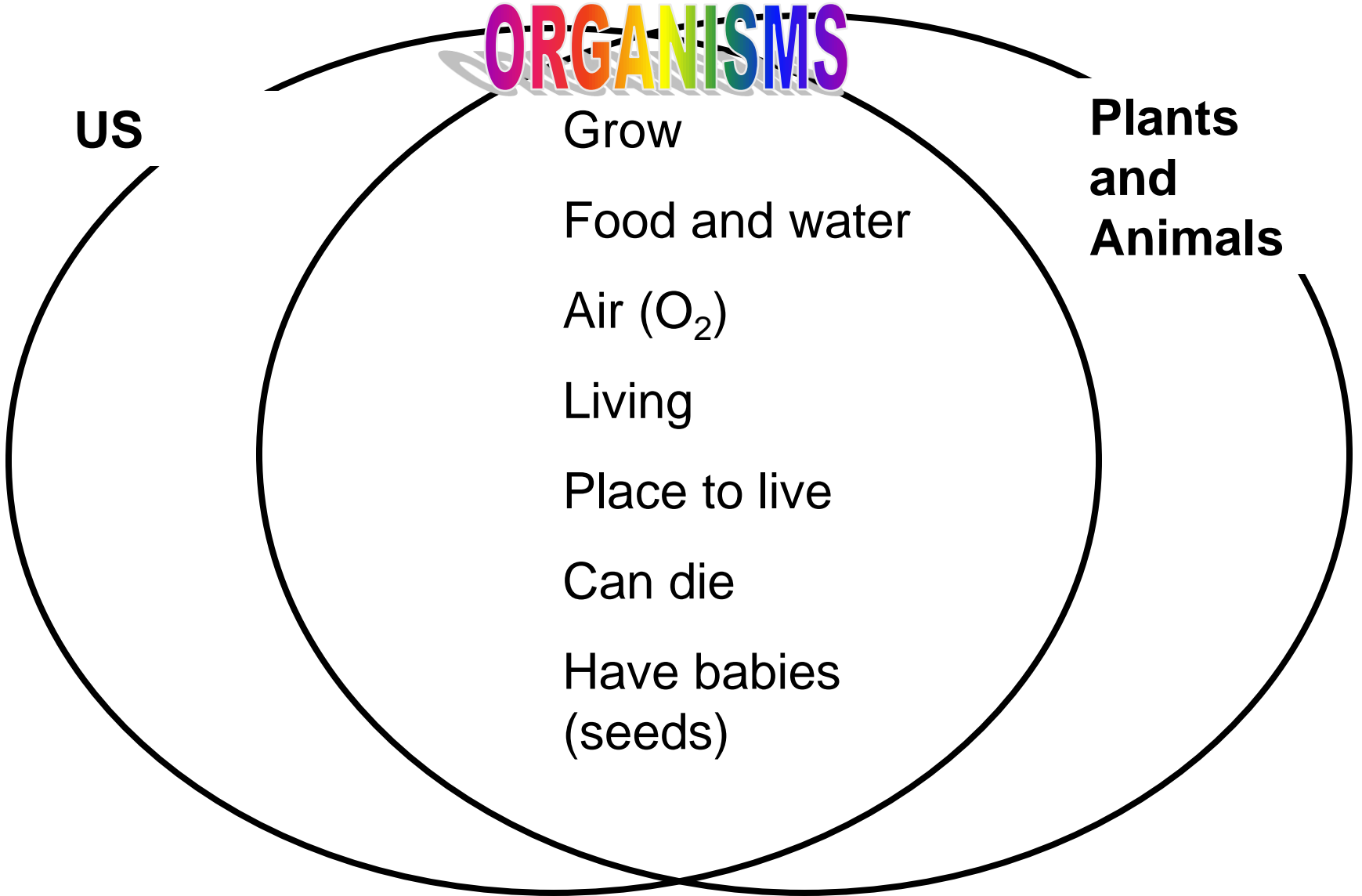
Place to live

Can die

Have babies
(seeds)

Plants
and
Animals

US



Summative Assessments

- Post-Unit Assessment p. 193
- Additional Assessments p. 197