

May 15th

LESSON 5

Reading Selection

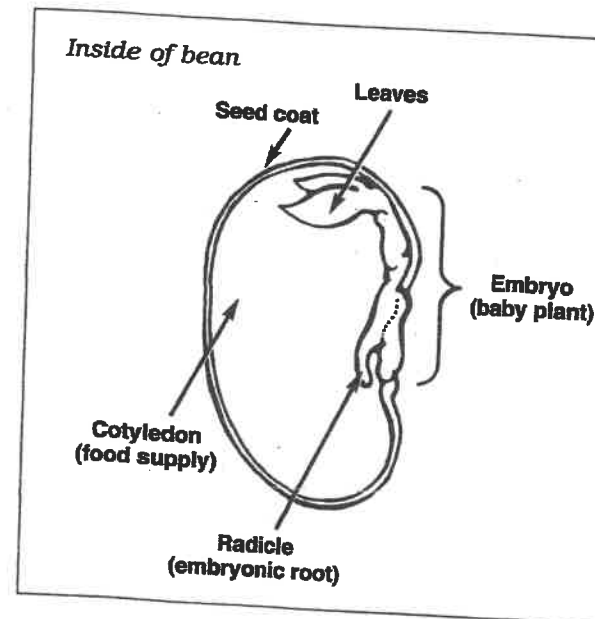
Growing Plants: How Seeds Spring to Life

Isn't nature amazing? Just give a seed water and the right temperature and watch it spring into new life.

Moisture is very important to sprouting, or **germination**. In your own terrarium, for instance, never allow seeds to dry out once you have planted them. Be sure to check your terrarium daily. Sprinkle it gently when the top of the soil surface seems dry.

Temperature is important, too. Most seeds will germinate at 22°C to 25°C (72°F to 78°F). This is a comfortable temperature for most people, too. So if you are comfortable, then probably all is well with your seeds.

It's interesting that most kinds of seeds do not need light to germinate. (That makes sense since they are under ground.) But once a plant sprouts from the seed, it needs lots of light to produce its own food.



Tiny Food Warehouse

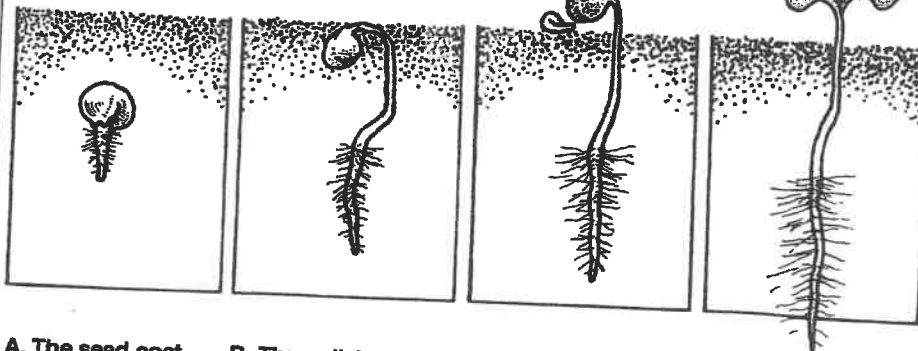
So what happens before a plant gets into the light and can start making food? Each seed

carries along its own built-in warehouse of food. This gives it enough energy to start growing. Look at the picture of the inside of a bean seed.

Only a small part of the seed is the baby plant, or **embryo**. The rest is all stored food.

In nature, not every seed germinates. Can you think of some reasons why? Well, some are eaten, some rot, and some fall into places where they can't grow (rivers or paved walkways, for instance). That is why most plants produce so many seeds—to make sure that life continues, no matter what.

Seed germination



A. The seed coat splits and the embryonic root, or radicle, emerges.

B. The radicle grows downward and develops root hairs.

C. The stem grows upward and pulls the cotyledons above the soil. The seed coat falls off.

D. The cotyledons open.

Name _____

Growing Plants: How Seeds Spring to Life – Lesson 5

After reading the text selection "Growing Plants: How Seeds Spring to Life" answer the following questions.

1. According to the text selection most seeds will germinate at this temperature range.
☐ A. 22 C to 25 C
☐ B. 32 C to 35 C
☐ C. 72 C to 78 C
2. **Cite the Text.** Underline the part in the text selection where the answer to Question 1 was located.
3. Which of the following are very important to successfully germinate a plant?
☐ A. moisture and light
☐ B. moisture and temperature
☐ C. light and temperature
4. **Cite the Text.** Underline the part in the text selection where the answer to Question 3 was located.
5. What is the plant called when it is a "baby plant?"
☐ A. radicle
☐ B. cotyledon
☐ C. embryo
6. According to the text selection not all seeds germinate. Give three reasons why some seeds may not germinate?

NAME _____

Life, Earth, and Space Science Assessment Probes

Is It Living?

Listed below are examples of living (which includes once-living) and nonliving things. Put an X next to the things that could be considered living.

- | | | | |
|----------------------------------|--|---|--|
| <input type="checkbox"/> tree | <input type="checkbox"/> egg | | |
| <input type="checkbox"/> rock | <input type="checkbox"/> bacteria | | |
| <input type="checkbox"/> fire | <input checked="" type="checkbox"/> virus | | |
| <input type="checkbox"/> boy | <input checked="" type="checkbox"/> flower | | |
| <input type="checkbox"/> wind | <input type="checkbox"/> Sun | | |
| <input type="checkbox"/> rabbit | <input type="checkbox"/> mushroom | | |
| <input type="checkbox"/> cloud | <input type="checkbox"/> potato | | |
| <input type="checkbox"/> feather | <input type="checkbox"/> leaf | | |
| <input type="checkbox"/> grass | <input type="checkbox"/> butterfly | <input type="checkbox"/> fossil | <input checked="" type="checkbox"/> Moon |
| <input type="checkbox"/> seed | <input checked="" type="checkbox"/> germ | <input type="checkbox"/> hibernating bear | <input type="checkbox"/> river |



Explain your thinking. What "rule" or reasoning did you use to decide if something could be considered living?

The Riverbank Environment



Dependent Relationships Between Plants and Animals

Dependent Relationships
Standard LS2A
Lesson 1

Name _____

Use the Riverbank Environment Drawing from Lesson 1 to do the following:

- 1) Identify dependent relationships between animals and plants.
- 2) Identify the need of the relationship: food, shelter or protection.
- 3)

An example has been done for you below.

FOOD:

1. The duck depends on the mare's tail for food.

SHELTER:

- 2) The deer depends on the forest for shelter.

PROTECTION:

- 1) The tadpoles depends on the water plants for protection.

LESSON 5

Reading Selection

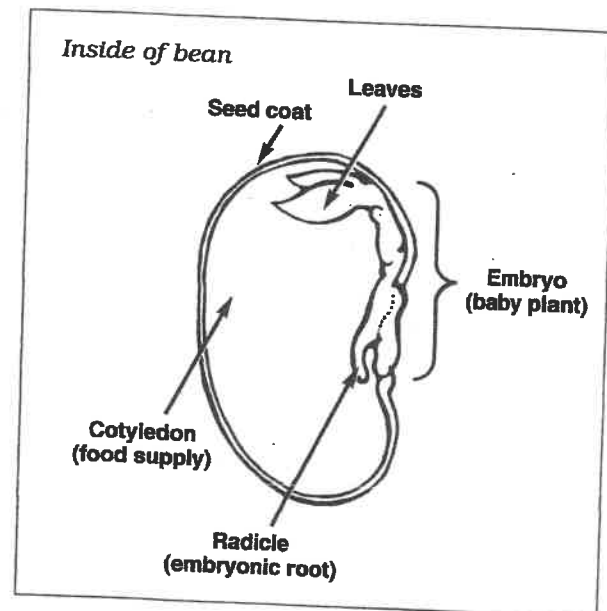
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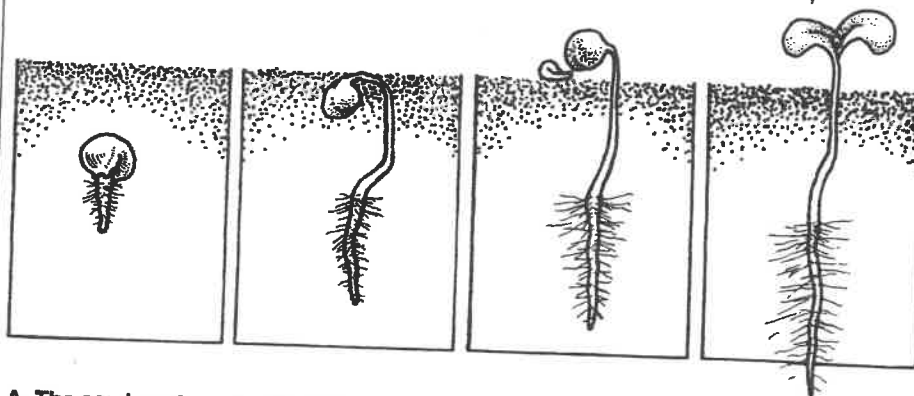
So what happens before a plant gets into the light and can start making food? Each seed

carries along its own built-in warehouse of food. This gives it enough energy to start growing. Look at the picture of the inside of a bean seed.

Only a small part of the seed is the baby plant, or **embryo**. The rest is all stored food.

In nature, not every seed germinates. Can you think of some reasons why? Well, some are eaten, some rot, and some fall into places where they can't grow (rivers or paved walkways, for instance). That is why most plants produce so many seeds—to make sure that life continues, no matter what.

Seed germination



A. The seed coat splits and the embryonic root, or radicle, emerges.

B. The radicle grows downward and develops root hairs.

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☐ A. radicle
☐ B. cotyledon
☒ C. embryo
6. According to the text selection not all seeds germinate. Give three reasons why some seeds may not germinate?

Some seeds don't germinate because:

1. Some are eaten,

2. The seed may rot,

3. Some fall into places they cannot grow,

NAME _____

Life, Earth, and Space Science Assessment Probes

Possible answers

Is It Living?

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- | | |
|--|--------------------------------|
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Explain your thinking. What "rule" or reasoning did you use to decide if something could be considered living?

Possible answers could be

• If eats or gets nutrition from other living things.

• If it needs water to survive.

Dependent Relationships Between Plants and Animals

Dependent Relationships
Standard LS2A
Lesson 1

Name _____

Use the Riverbank Environment Drawing from Lesson 1 to do the following:

- 1) Identify dependent relationships between animals and plants.
- 2) Identify the need of the relationship: food, shelter or protection.
- 3)

An example has been done for you below.

FOOD:

1. The duck depends on the mare's tail for food.

Possible answers may include:

- The frog depends on flies for food.
- The deer depends on grass for food.
- The bee depends on nectar for food.

SHELTER:

- 2) The deer depends on the forest for shelter.

Possible answers:

- Fish depend on the water for shelter.
- Beavers depend on wood to build shelter.
- Swans depend on cattails for shelter.

PROTECTION:

- 1) The tadpoles depends on the water plants for protection.

Possible answers:

- Fish depend on water plants for protection.
- Deer depend on trees for protection.
- Snails depend on their shell for protection.

The Riverbank Environment



EAT OR BE EATEN

a food chain game

Mouse



Cartoon mice eat cheese. Real mice like me eat human food—when we can find it. I'll also eat seeds and nuts (like acorns), or snack on vegetables like zucchini or tomatoes. And sometimes eat crickets and beetles.

I eat...

Jumping Spider



I pounce on insects that spend time on the ground. I eat crickets, ants, cockroaches, caterpillars, and even daddy long legs.

I eat...

Pigeon



You can feed me popcorn, bread crumbs, and peanuts. But when no one gives me human food, I eat seeds and berries—plus snails, earthworms, and crickets.

I eat...

Fence Lizard

I eat ants, beetles, crickets, caterpillars, cockroaches, pill bugs, snails, and spiders.



I eat...

Web-spinning Spider

I eat flying insects. House flies, butterflies, and even honeybees can get caught in my web. Dinner is served.



I eat...

Dead Leaves

I may not look tasty, but I'm just what some animals want for lunch.



I am eaten!

Crow

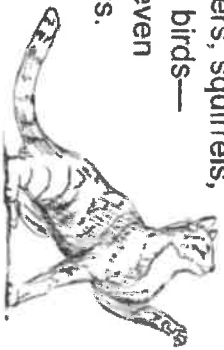


I eat almost anything: acorns, fruits, seeds, and human food. I like beetles, crickets, and cockroaches. I hunt for animals like frogs, moles, mice, and lizards. I'll even steal eggs from the nests of robins, sparrows, and pigeons.

I eat...

House Cat

Yes, I eat cat food. But I like to hunt, too. I prey on mice, jophers, squirrels, small birds—and even lizards.



I eat...

MYSTERY SCIENCE

Swallowtail

Butterfly

I drink nectar from flowers—and I'm not picky about what flowers. I'm happy in a flower garden, vegetable garden, or a clover patch. Even a parsley plant is fine with me.



I eat...

MYSTERY SCIENCE

Sparrow

I eat seeds, grains, grass, and berries. I'll also eat bread crumbs if they're around. And sometimes I'll snack on ants.



I eat...

MYSTERY SCIENCE

Clover

I have leaves, flowers, and small seeds. They're a great snack if you like that sort of thing.



I am eaten!

MYSTERY SCIENCE

Opossum

I eat all kinds of things. I catch frogs, moles, snakes, mice, and salamanders. I snack on beetles, cockroaches, earthworms, crickets, and snails. I'm also happy to eat vegetables, seeds, even human food!



I eat...

Snail

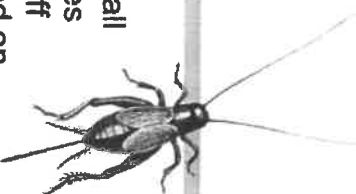
I eat soft green plant leaves—lettuce, parsley, flower leaves, clover, and even grass. Oak leaves are too tough for me, but if I'm hungry I'll nibble on dead leaves.



I eat...

Cricket

I eat seeds, small fruits, and leaves—either fresh off the plant or dead on the ground. And I'm always hungry! Every day, I eat my own body weight in food.



I eat...

Lunch Leftovers

I'm the lunch some kid didn't finish—half a peanut-butter sandwich and an apple with a bite out of it. That's OK—I'm the perfect treat for some hungry animal.



I am eaten!

Robin



hop around
searching for
worms, caterpillars,
snails, beetles, crickets,
ants, spiders, and even
laddy long legs. I'll also eat
nuts and berries off bushes
and trees.

I eat...

MYSTERY SCIENCE

Caterpillar of a Moth

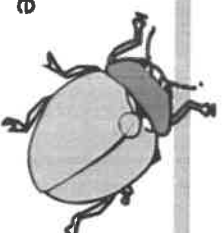


I chow down on
rotting wood and
dead leaves.
That's why you can
usually find me hiding under
a rotting log.

I eat...

MYSTERY SCIENCE

Beetle



I eat
caterpillars.
In fact, some
people call me
the caterpillar hunter. I'll also
eat earthworms and snails.

I eat...

MYSTERY SCIENCE

Rotting Log



I'm where hungry animals
can find rotting wood, bark,
and dead leaves. I'm tasty
eating for the right critter!

I am eaten!

MYSTERY SCIENCE

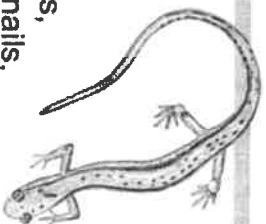
Raccoon



sometimes raid trash cans
or food you threw away.
In the wild I eat nuts,
fruit, beetles,
worms, frogs,
salamanders,
snails, moles,
and snakes.

I eat...

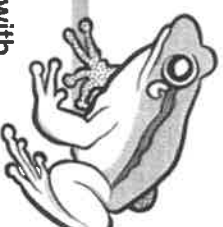
Salamander



I eat nice
crunchy
beetles,
ants, crickets,
along with snails,
spiders, ants, and pillbugs.
Want to join me for lunch?

I eat...

Frog



I eat insects with
my long sticky tongue—
beetles, cockroaches,
crickets, houseflies,
butterflies, and even bees.
I'll also snack on
earthworms, snails, and
pillbugs. Yum!

I eat...

Parsley Plant



I'm where
animals can find leaves,
flowers, and small seeds. In
fact, I'm one of the *only* plant
that swallowtail caterpillars
eat! Bragging rights.

I am eaten!

Hawk

swoop down
to grab small
animals with
my sharp claws.
I eat gophers,
nice, pigeons,
robins, sparrows, even
lizards and snakes!



I eat...

MYSTERY SCIENCE

Daddy

Longlegs

I eat insects of
all kinds—along with
worms, snails, and pill bugs.
I'm not a spider, but I eat
spiders when I catch them.

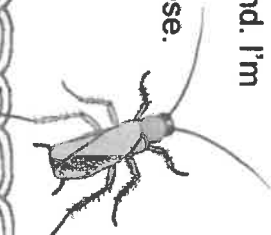


I eat...

MYSTERY SCIENCE

Cockroach

I eat many things, including
bark, paper, leaves (living
and dead), and any human
food I can find. I'm
particularly
fond of cheese.



I eat...

MYSTERY SCIENCE

Oak Tree

Some
animals
are nuts about
me. After all,
I provide lots
of acorns—along
with leaves and bark.



I am eaten!

MYSTERY SCIENCE

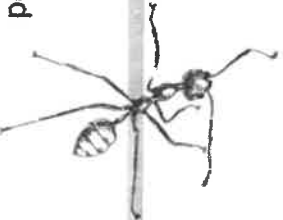
Mole

chow
down
underground (and under
dogs). I'll eat beetles,
earthworms, pill bugs, and
crickets. I stay hidden in my
tunnel, safe from hawks and
housecats!



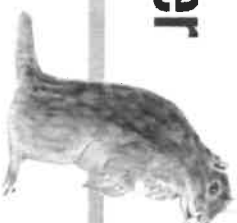
Ant

I'm happy to
eat human food
(like peanut butter),
but when that's not around,
I'll eat nectar from flowers,
seeds from grasses, and
any dead insects I find lying
around.



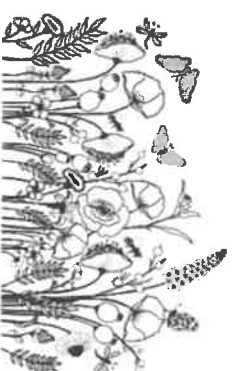
Gopher

I tunnel
underground and
gnaw the roots of plants—
any plants! Sometimes
I leave my hole to snack
on leaves—keeping an eye
out for animals that want to
snack on me!



Flower Garden

Come and get it! I have lots
of flowers with sweet nectar,
plus lots of leaves and seed



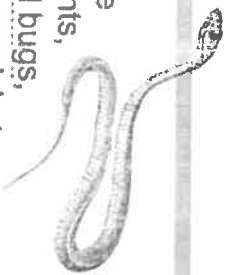
I eat...

I eat...

I eat...

I am eaten!

Garter Snake



I hunt in the grass for ants, beetles, pill bugs, cockroaches, crickets, earthworms, and spiders. I also eat mice, frogs, salamanders, & lizards. Don't be scared of me... unless you're on my list of snacks.

I eat...

MYSTERY SNACK

Earthworm



I eat bits of plants—like dead leaves or rotting wood. Anywhere that leaves are falling, I can find something for lunch.

I eat...

Swallowtail Caterpillar



Like many caterpillars, I'm a picky eater. I only eat carrot leaves and parsley plants from vegetable gardens.

I eat...

MYSTERY SNACK

Honeybee



I eat pollen and nectar from flowers. I'm happy anywhere flowers bloom—a flower garden, a vegetable garden, a parsley plant, or a patch of clover.

I eat...

Gray Squirrel



I eat nuts, like acorns from the oak tree. But that's not all! I eat seeds, fruit, birds' eggs, even lunch leftovers! Peanut butter sandwich? Yes please!

I eat...

MYSTERY SNACK

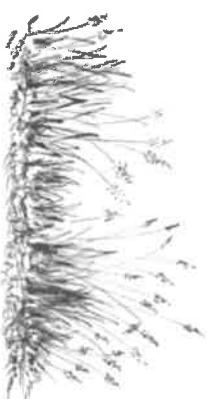
Pill bug



I eat dead leaves, rotting wood, and the fungi that grow on them. Look for me under logs. Poke me, and I roll in a ball—that's why some people call me a roly poly.

I eat...

Grass



I have lots of leaves and lots of seeds. That's lunch for lots of critters.

I am eaten!

MYSTERY SNACK

Veggie Garden



If you're looking for lettuce, tomatoes, cucumbers, and zucchini squash, I'm the place. Stop by for some leaves and flowers too!

I am eaten!

Name:

 eats eats eats
 eats eats eats

Chain 1: Write down how many cards are in the chain: If there are 4 or more, add 2 bonus points:

Chain 2:

Write down how many cards are in the chain:
 If there are 4 or more, add 2 bonus points:

Chain 3: Write down how many cards are in the chain: _____ If there are 4 or more, add 2 bonus points: _____

Chain 4:

Write down how many cards are in the chain:
If there are 4 or more, add 2 bonus points:

Chain 5: Write down how many cards are in the chain: _____
If there are 4 or more, add 2 bonus points: _____

TOTAL points = _____ points



MYSTERY
SCIENCE
Web of Life | Mystery #1



Rules

MYSTERYscience

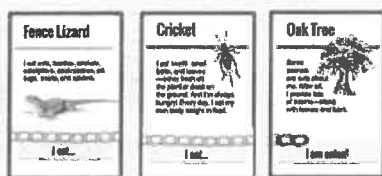
Web of Life | Mystery 1

THE GOALS OF THE GAME:

- Make as many food chains as you can.
- Make the chains as long as you can. (Longer chains get bonus points!)

HOW SCORING WORKS:

You'll get **1 point** for every card in a food chain:



3 cards = 3 points

If your chain is 4 cards or longer, you get an extra **2 bonus points**:



**4 cards
+ 2 bonus points
= 6 points**

HOW STEALING WORKS:

- You CAN'T steal on the first round.
- Starting in the second round, you can choose a card from the center stack or you can **STEAL** a card from another player *if* you can use that stolen card to make a chain right away.
- You CAN'T steal a card that is already in a player's food chain.

TIP: THINK CAREFULLY

Read the cards carefully. The Cricket card says crickets eat leaves. The Oak Tree has leaves. That means the cricket can eat the oak tree!



TIP: REARRANGE YOUR CHAINS

You can rearrange your food chains whenever you want. Take them apart and put them together in different ways. Can you figure out ways to get longer chains?

NAME _____

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___ rock

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___ fire

___ virus

___ boy

___ flower

___ wind

___ Sun

___ rabbit

___ mushroom

___ cloud

___ potato

___ feather

___ leaf

___ grass

___ butterfly

___ fossil

___ Moon

___ seed

___ germ

___ hibernating bear

___ river



Explain your thinking. What "rule" or reasoning did you use to decide if something could be considered living?
