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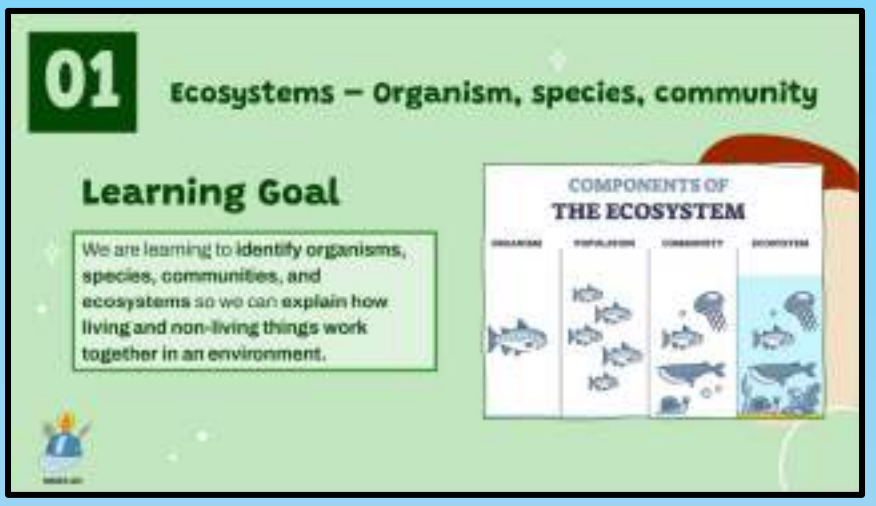
Google Slides Lessons Preview

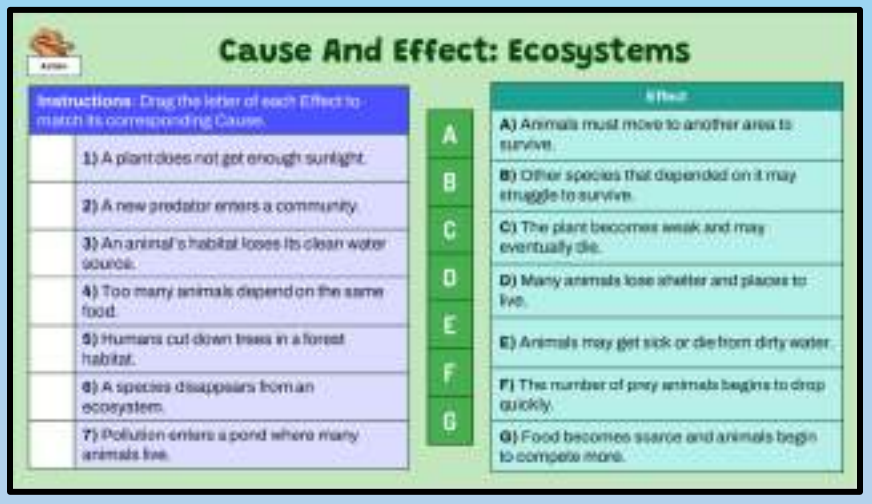
Alberta Science Curriculum
Living Systems – Grade 4

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!





Part 2 – Action!

- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!

- Exit Cards
- Quizzes
- Reflection
- And More!

Alberta Science Curriculum
Living Systems – Grade 4

Sorting Activity — Vertebrates Or Invertebrates

(Place a ☑ in the correct column.)

	Items	Vertebrate	Invertebrate
1	A reptile with a long backbone and many vertebrae		
2	A creature that breathes using lungs and has a spine		
3	A creature with a soft body and no internal skeleton		
4	An animal that belongs to the group of mammals		
5	An animal with jointed legs but no bones inside		
6	A creature that has a hard outer covering instead of bones		
7	An animal covered in feathers		
8	A creature that moves using a shell but has no backbone		
9	An animal with a backbone made of many small bones		

Use this to complete the activity: ☑

...ivity: What Are Invertebrates?

(Drag each description to the correct system)

Flight Term or Aircraft	Description
Invertebrate	
Exoskeleton	
Insect	
Scorpion	
Worm	
Thorax	
Abdomen	

Has an exoskeleton and jointed legs but is not an insect

The back body part of an insect

The middle body part of an insect

An animal with no backbone

Has 6 legs and three body parts

Has a long soft body with no legs

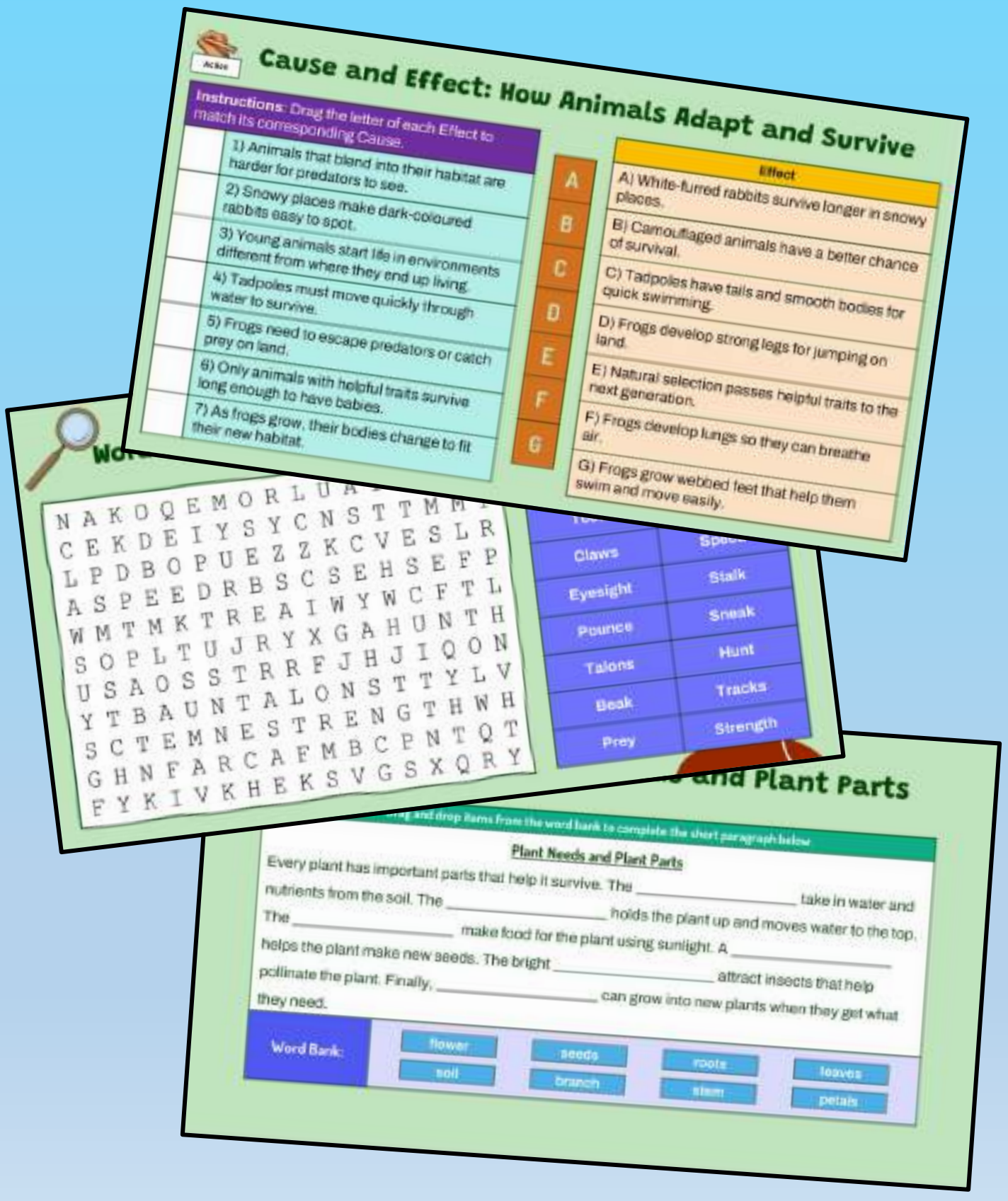
A hard outer covering that protects the body

Ani...

Write the cor...

Question	A		
1) What is locomotion?	How animals sleep	How animals move from place to place	
2) Which animal is bipedal?	Lizard	Human	Snail
3) Which animal moves by slithering?	Snake	Beetle	Kangaroo
4) What helps a snail move?	Sharp claws	Thick fur	A slime trail
5) What does *quadruped* mean?	An animal with four legs	An animal with wings	An animal with no legs
6) Which animal can roll its body to move?	Frog	Hedgehog	Caterpillar

Alberta Science Curriculum
Living Systems – Grade 4



Workbook Preview

Grade 4 – Science Unit

Organizing Idea: Living Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions

Guiding Question: In what ways do the structures of organisms support survival?

	Learning Outcome – Students analyze organisms and relate external structures to functions.	**Pages**
LS.1	Organisms are living things that respond to stimuli and include plants, humans, and other animals	6-11
LS.2	Organisms can be classified in various ways, including by appearance habitat structures	12-21, 23-33
LS.3	Functions of external structures in an organism include eating moving protecting sensing reproducing	47-49, 94
LS.4	Plants can detect sensory stimuli, such as light, gravity, temperature, and touch, which help them grow and survive.	95-111
LS.5	Sensory organs of animals include ears eyes nose tongue skin Sensory organs in animals help them meet their needs in various ways, such as by detecting food other animals danger temperature	112-130
Computer Science		
CS.1	Students examine and apply design processes to meet needs.	22, 44-46, 50, 131-133

NAME: _____

LIFE SYSTEMS

Name: _____ 6

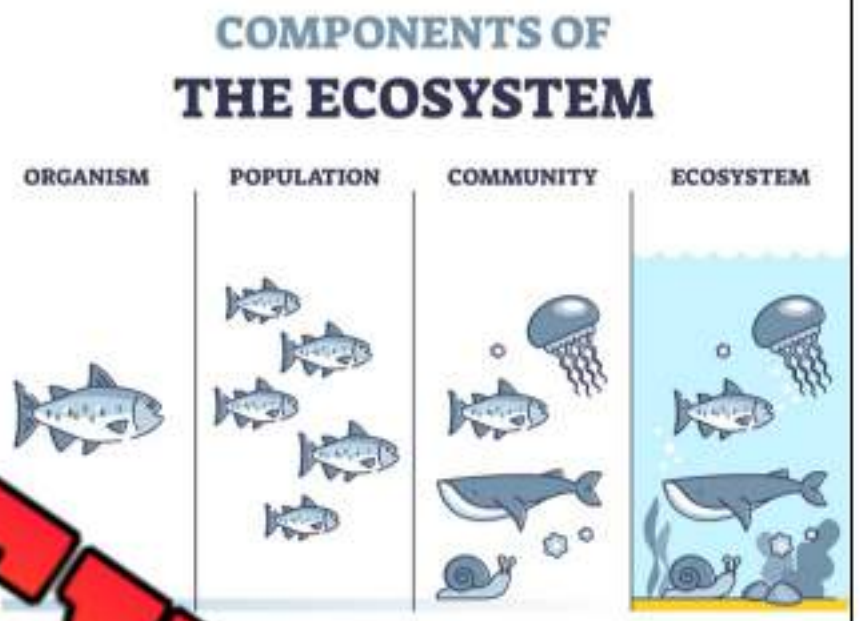
Curriculum Connection
LS.1

Ecosystems – Organism, Species, Community

Ecosystems

An **organism** is a single plant or animal. Therefore, you are an or[illegible]m.

A [illegible] group of organi[illegible] Yes, [illegible] a species, and [illegible] single organism. Other [illegible] of species include dogs, cats, [illegible]s, a[illegible] are not a species. They are a type of animal.



A **community** is a group of different spe[illegible]hat [illegible]e area. This means that you live in a community with other human[illegible] an[illegible]like dogs and squirrels, as well as different plant species.

An **ecosystem** is the community of plants and animals living in [illegible] area and the non-living things there too. Ecosystems have the basic needs for the organisms that live there. The non-living things in ecosystems include water, air, and rocks.

For example, humans live in areas where food can grow and where water can be found. No humans live in Antarctica because the habitat in Antarctica does not give the basic needs humans need to survive.

Name: _____ 7

Curriculum Connection
LS.1

Definitions

What do each of the terms below mean?

Organism	
Species	
Community	
Ecosystem	

Questions

Answer the questions below using evi... om...

1) What animal species live in the ecosystem around you?

2) What kinds of non-living things can you find in your ecosystem?

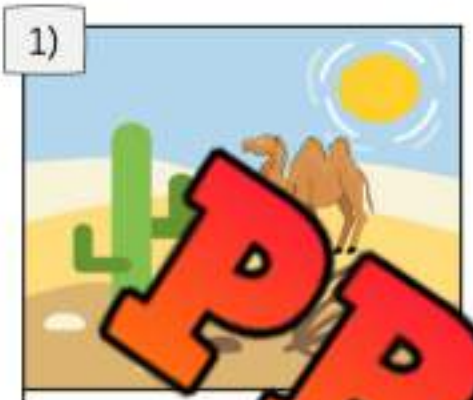
Name: _____ 9

Curriculum Connection
LS.1

Organism, Species, Community, Ecosystem

Label Is the picture an example of an organism, species, community or ecosystem

1)



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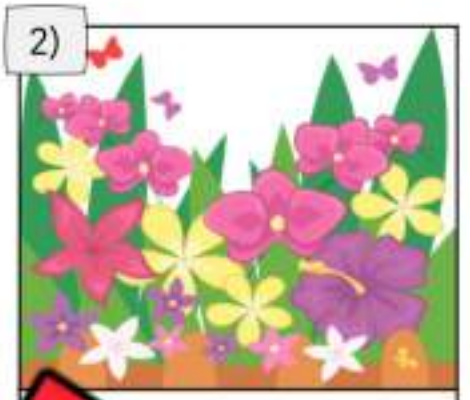

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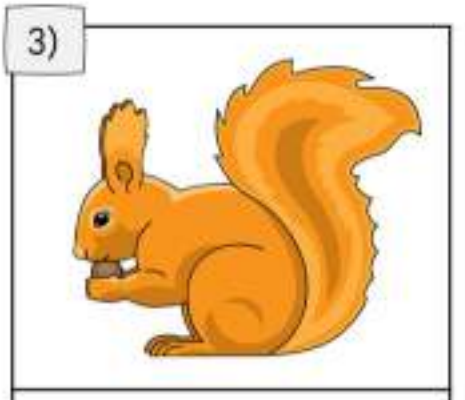

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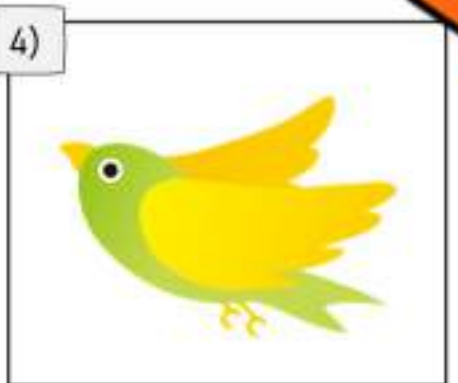

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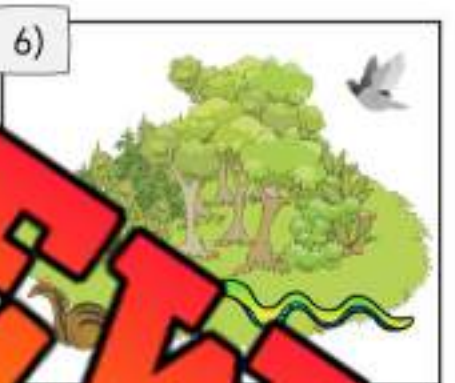

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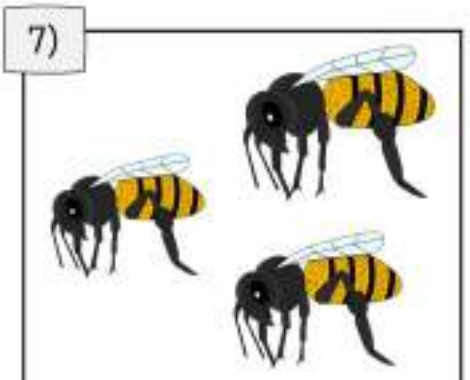

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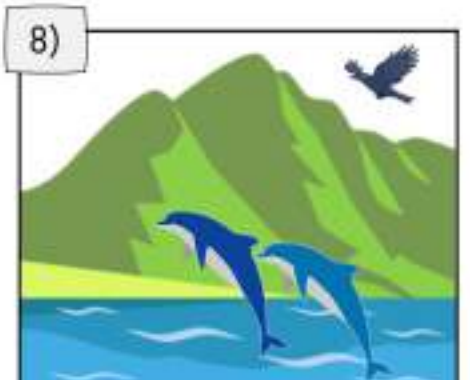

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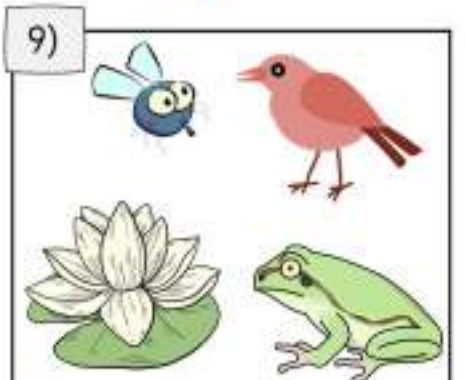
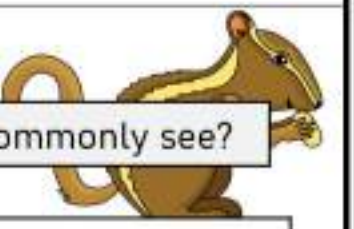


Name: _____ 10

Curriculum Connection
LS.1

Living Things In Your Area



Animals

What animals live in your area? Can you think of 20 you commonly see?

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

Plants

Plants are living things too. What plants do you see

1	
2	
3	
4	
5	

6	
7	
8	
9	
10	

Name: _____ 11

Curriculum Connection
LS.1

Scavenger Hunt – Finding Common Plants

Directions Look around your school yard for the common plants below. Put a check if you find the plant.

☐ hroom


☐ Dandelion


☐ Grass


☐ Daisy


☐ Clove


☐ Buttercup


☐ Tulip


☐ Orchid


☐ Thistle


☐ Maple Tree


☐ Yarrow


☐ Ivy

Name: _____ 12

Curriculum Connection
LS.2

How We Sort Living Things

How We Sort or Classify Living Things

Have you ever wondered how we know a dog is a dog or a rose is a rose? It's because scientists classify, or sort, all living things, called organisms, into different groups. They do this by looking at their appearance, where they live (habitat), and their structures.

Classifyi ance

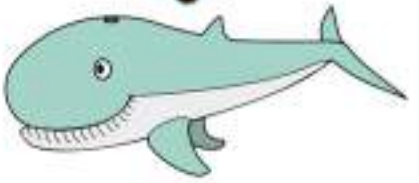
The or its appearance, is one of the simplest ways to classify it.

- Anim s wit rds ke sparrows, eagles, and penguins.
- Animals wi nmals cats, and bears.
- Plants with Flow Pla sies, and sunflowers.
- Plants with Needles: P ine actuses.

Classifying by Habitat

Where an organism lives, or its habitat, is anot t wa it.

- Jungle Creatures: Animals like monkeys and pa ot like fe d orchids.
- Desert Dwellers: Animals like camels, snakes, and liz nts ti
- Ocean Life: Animals like whales, dolphins, and sharks. Plants lik p.
- Mountain Movers: Animals like mountain goats, eagles, and snow leo tants like evergreen trees and edelweiss.



Classifying by Structures

We can classify organisms by their special parts, or structures.

- Organisms with Wings: Animals like birds, bats, and butterflies.
- Organisms with Fins: Animals like fish, dolphins, and sharks.
- Organisms with Roots: Plants like trees, grasses, and flowers.
- Organisms with Antennae: Animals like insects, lobsters, and snails.

Name: _____ 13

Curriculum Connection
LS.2

Draw	Draw organisms with the characteristics below. Use ones from the reading or think of your own

O[illegible]ms	Desert Organisms
Organisms with an Antennae	Animals [illegible]
Plants with Roots	Animals with winds

Curriculum Connection
LS.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Classify the following living things.

1) Fish with fins are classified by?	Appearance Structures
2) Animals with fur are grouped by?	Appearance Structures
3) Animals with wings like bats are by?	Structures Habitat
4) Frogs living near ponds are by?	Structures Habitat
5) Plants with bright flowers are by?	Appearance Habitat

Name: _____

Classify the following living things.

1) Fish with fins are classified by?	Appearance Structures
2) Animals with fur are grouped by?	Appearance Structures
3) Animals with wings like bats are by?	Structures Habitat
4) Frogs living near ponds are by?	Structures Habitat
5) Plants with bright flowers are by?	Appearance Habitat

Name: _____

Classify the following living things.

1) Fish with fins are classified by?	Appearance Structures
2) Animals with fur are grouped by?	Appearance Structures
3) Animals with wings like bats are by?	Structures Habitat
4) Frogs living near ponds are by?	Structures Habitat
5) Plants with bright flowers are by?	Appearance Habitat

Name: _____ 15

Curriculum Connection
LS.2

Sorting Common Plants

Directions Circle the examples of the common plant types below

Shrubs	
Trees	
Creepers	
Climbers	
Herbs	

Name: _____ 16

Curriculum Connection
LS.2

Creeper or Climber

Directions Circle the examples of the common plant types below

Creeper	Climber

Melon

Creeper	Climber

apevine

Creeper	Climber

Zucchini Plant

Creeper	Climber

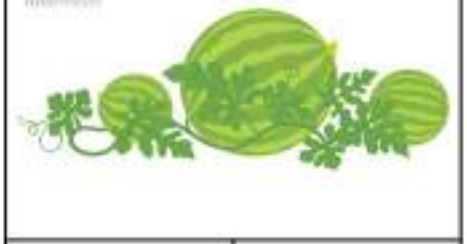
Passionflower Vine

Creeper	Climber

Pumpkin

Cr	ber

er

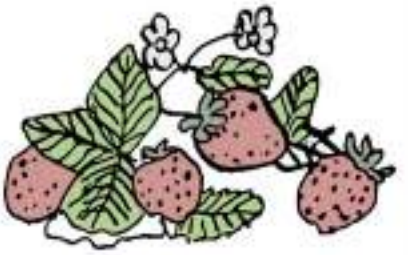


Creeper	Climber

Watermelon

Creeper	Climber

Bitter Gourd



Creeper	Climber

Strawberry

Name: _____ 17

Curriculum Connection
LS.2

Classifying Animals – Vertebrates and Invertebrates

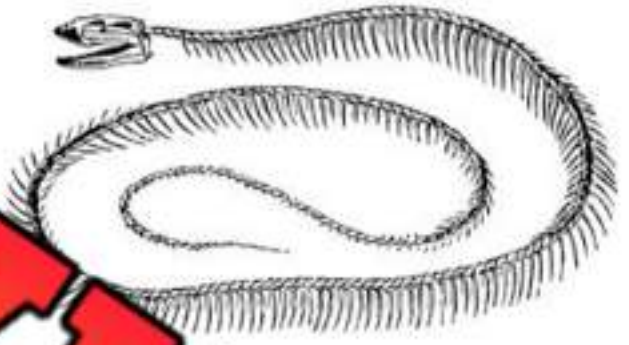
Animal Kingdom – Vertebrates vs Invertebrates

We can split the animal kingdom into two groups: Vertebrates and Invertebrates. **Vertebrate** animals have a backbone, while **invertebrate** animals do not.

Hors

Grouping Animals – Vertebrates

Vertebrate animals include mammals, reptiles, birds, amphibians, and fish. Each of these animals have backbones.



What are Backb

A **backbone** is a sp are p

and we have spines. You a ttach

to the back of your head, dow

neck and back, and into your hip. Human

have around 33 bones in our spines. Thes ones ar ed v sae.

Snakes are reptiles and they have backbo well. one has way more bones than we have. Snakes have between 200 and 4 e. That of bones!

True or False Is the statement true or false?

1. Humans have more backbones than snakes	de	False
2. Snakes have between 200-400 bones	True	False
3. Mammals, fish, reptiles, birds, and amphibians all have backbones	True	False
4. Humans are not vertebrates	True	False

Explain What is the difference between vertebrates and invertebrates?

Name: _____ 18

Curriculum Connection
LS.2

Types of Animals - Mammals

Mammals

A mammal is a type of animal. We know if an animal is a mammal if it can:

- Breathe air
- Has a backbone
- Grows hair or fur
- Gi[illegible]th to live young
- D[illegible]from their mothers

Mamma[illegible]re the [illegible]imals on earth. We are mammals. You were born from your mother, not fr[illegible]e[illegible]ou ar[illegible]blooded, and have a backbone. Almost all humans have hair and we al[illegible]the [illegible]could make us milk when we were babies.

Examples of Mammals

There are over 6,000 different typ[illegible]of m[illegible]a list of some mammals: humans, gorillas, rats, mice, dogs, cats, whales, [illegible]ns, lion[illegible]s[illegible]ys, bats, horses, and more!

Fill in the Blanks

Write the missing word[illegible]e li[illegible]

1. There are more than _____ types of mam[illegible]
2. Mammals are the _____ animals on earth.
3. Mammals are born from their mothers, not from an _____.
4. Mammals are warm-_____ animals.

Think

Write 3 things you learned about mammals

1)	
2)	
3)	

Name: _____ 19

Curriculum Connection
LS.2

Types of Animals – Reptiles

What are Reptiles?

Reptiles are vertebrate animals that share these things in common:

- Four legs (snakes do not, but use to)
- Most lay eggs but some have live young
- Are cold-blooded
- Have scales for skin, not fur or hair
- Breathe with their lungs
- Have dry

What Do ... Hunt?

Most ... are h... y eat mostly insects. Larger reptiles like lizards and snakes will hunt birds, ... kill their prey with venom before they eat them.

When some ... are ... y will hide or camouflage themselves to look like their surroundings. ... chan... olour of their skin to hide from predators.

Examples of Reptiles

There are about 10,000 types of reptiles ... exam... lizards, turtles, snakes, crocodiles and even dinosa...

Think — Write 3 things you learned about rep...

1)	
2)	
3)	

Multiple Choice — Circle the best answer

1. Do reptiles have dry or moist skin?	Dry	Moist
2. Reptiles are cold or warm blooded?	Cold	Warm
3. Reptiles eat mostly...	Mice	Insects
4. There are how many types of reptiles?	2,000	10,000
5. Which animal changes their colour?	Snakes	Chameleons

Name: _____ 20

Curriculum Connection
LS.2

Types of Animals - Amphibians

What are Amphibians?

Amphibians are vertebrate animals that are born in the water. As amphibians get older, they will grow lungs that allow them to breathe outside of the water. This means that adult amphibians can live on land or in the water.

Amphibians are animals that have these things in common:

Cold-[illegible]d	Lay eggs	Moist skin	Webbed feet

Amphi[illegible]oded

Like fi[illegible] reptil[illegible]ians are cold-blooded. Being cold-blooded means their bodies don't a[illegible]t[illegible]han[illegible]ir temperature. They need to use their surroundings to cool off or warm[illegible]uma[illegible]looded. This means our bodies change our temperature to keep it at[illegible]s Cels[illegible]n we get too warm, we release water as sweat to cool our skin.

Examples of Amphibians

- Frogs, salamanders, newts, and toads

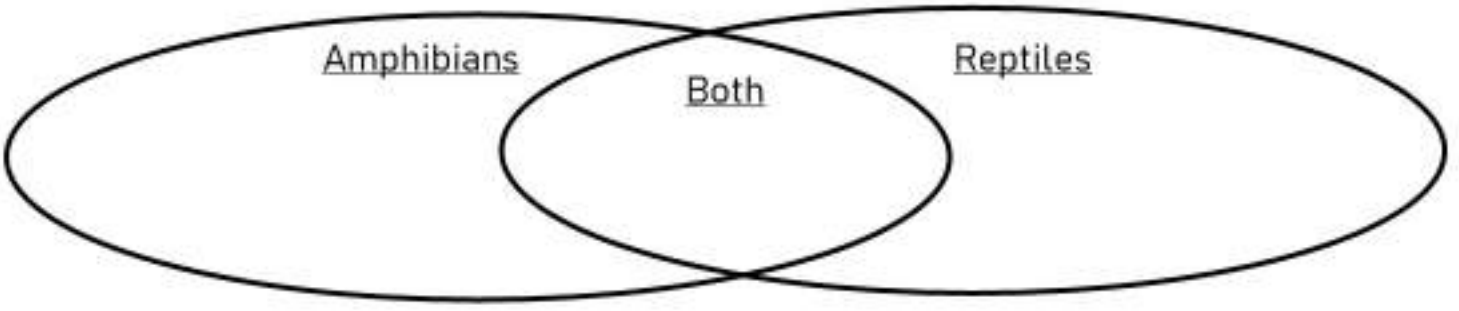
True or False

Is the statement true or false?

1) Amphibians are born on land	[illegible]	[illegible]alse
2) Amphibians are born with lungs	[illegible]	False
3) As amphibians get older, they can breathe outside of water	[illegible]rue	False
4) Snakes are amphibians	True	False

Compare

Compare reptiles with amphibians



Name: _____ 21

Curriculum Connection
LS.2

Types of Animals - Fish

What are Fish?

Fish are animals that live in the water. Fish come in many different shapes and sizes. All fish have these things in common:

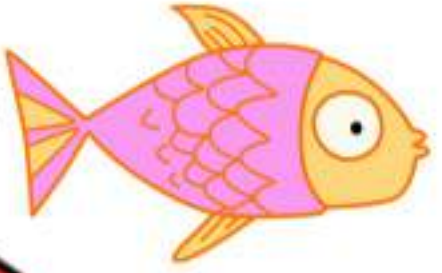
Cold-blooded	Vertebrates – have backbones	Have fins
Have scales, not fur	Breathe underwater using gills	Lay eggs

How Fish B

All fish h[illegible] allow them to breathe water. When we breathe, we use our lungs to breat[illegible]oxygen. F[illegible]heir gills to do the same thing. Fish still need oxygen to live, but they get thei[illegible]n t[illegible]ater.

Fun Fish Facts

- The longest fish is th[illegible]k whi[illegible]er 40 feet long
- The smallest fish is the dw[illegible]at [illegible]g
- Fish are great pets
- Whales can't swim backwards



Think Write 3 things you learned about fi[illegible]

1)	
2)	
3)	

Visualizing Draw what you were picturing while you were reading. Explain the picture

Name: _____ 23

Curriculum Connection
LS.2

Types of Animals - Birds

What are Birds?

Birds are very cool animals that are a lot different than other animals. There are over 9000 different types of birds. Birds have these things in common:

- ✓ Have feathers
- ✓ Warm-blooded
- ✓ Lay eggs
- ✓ Have wings but not all birds fly
- ✓ Vertebrates – have backbones

How Do Bi[illegible]?

Almost [illegible] because they have wings. Birds flap their wings to change the air press[illegible]ove an[illegible]eir wings. This gives them lift, just like an airplane.

The pere[illegible]s o[illegible] the fastest birds. It can fly at speeds of over 160km per hour! Some b[illegible] peng[illegible]fly.

Examples of Birds

- Parrots, penguins, humming[illegible]nch[illegible]ucans, swallows, herons, woodpeckers, eagles, owls and geese.

Question What do all birds have in comm[illegible]

1)	
2)	
3)	
4)	
5)	

Multiple Choice Circle the best answer

1) Which bird cannot fly?	Toucan	Penguin
2) Which bird is one of the fastest?	Peregrine Falcon	Eagle
3) All birds have	Feathers	Scales
4) All birds have	Fins	Wings
5) Birds can fly because of changing	Air pressure	Weather

Name: _____ 26

Curriculum Connection
LS.2

Types of Animals - Insects

Insects

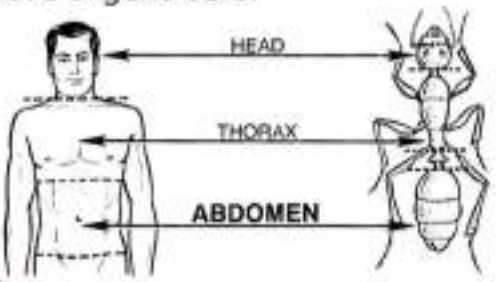
Insects make up the largest group of animals in the world. There are over 1 million species of insects! Insects have no backbone. This means they are invertebrates. Insects have exoskeletons instead of backbones. Examples of insects are grasshoppers, dragonflies, and butterflies.

Exoskeleto

Insects d bones like we do. Instead, they have exoskeletons that protect their inside ard shell that keeps the insect's organs safe.

Insect Bod

An insect has th body p thorax, and abdomen. The he th and eyes. Insects do not ha but antennae instead. They use their tenna the temperature, and find friends. The thorax is the chest of an ins at conn d to the abdomen. The abdomen is the back part of the insect. All insec 6 leg t have 4 wings.



Multiple Choice — Circle the best answer

1. An exoskeleton is...	Ha	
2. An example of an insect is a...	Liza	agonfly
3. The middle of an insect is the...	Abdomen	Thorax
4. How many legs does an insect have?	2	6
5. Insects are the largest or smallest type of animal?	Largest	Smallest

Draw — Draw a picture of an insect. Label its head, thorax, abdomen, wings, and legs

Name: _____ 27

Curriculum Connection
LS.2

Types of Animals - Spiders

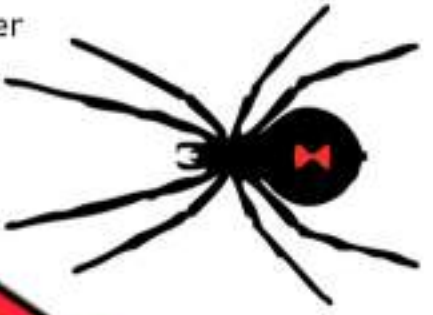
What are Spiders?

Spiders are small animals that are like insects because they both have exoskeletons. Spiders move differently than insects and have a different body. Read this list of things all spiders have in common:

8 Legs	ld-blooded	Lay eggs	Invertebrates – no backbone, just an exoskeleton

Spider We Spiders Hunt

A spid tic hat spiders make to trap their prey. Spiders mainly eat insects. When ins s fly o the ilk web, they get stuck and the spider eats them. Spiders spin silk to mak s. The h of spider silk is stronger than steel when com th f material.



Examples of Spiders

There are over 40,000 types of spi rs, s l s tarantulas, brown recluse spiders, and b widow s

True or False | Is the statement true or fal

1. Spiders have no backbone, just an exoskeleton	Tru	lse
2. All spiders have 6 legs	Tr	e
3. Spiders are warm-blooded	True	False
4. A spider's silk is stronger than steel	True	False
5. Spiders have the same bodies as insects	True	False

Questioning | Write two questions you have after reading the text

1)	
2)	

Name: _____ 28

Curriculum Connection
LS.2

Types of Animals - Worms

What are Worms?

A **worm** is a long, creeping animal that has a soft body. There are over 2,700 types of worms. All worms have these things in common:

No arms, legs, or eyes	Cold-blooded	Lay eggs
Have ha[illegible]n their skin that allow them to move	Have no lungs, but breathe through their skin	

Importa[illegible]

We ca[illegible] witho[illegible] Worms break down organic matter to make our soil better. Organic matte[illegible]s, g[illegible]old food and even animal poo. We need worms to turn these things i[illegible]ful s[illegible]ood soil, we can't grow food! That's why we need worms!

Interesting Facts about Worms

- Worms can eat their body weight in f[illegible] day
- If a worm's skin dries out, it will die so they can't [illegible]oo m[illegible]

True or False Is the statement true or fals[illegible]?

1) There are over 5,000 types of worms.	[illegible]	[illegible]e
2) Worms are not necessary for good soil.	[illegible]e	False
3) Worms can eat twice their body weight in food each day.	True	False
4) Worms break down organic matter.	True	False
5) Worms are warm blooded organisms	True	False

Explain Have you seen a worm before? Where and when did you see it? Explain.

Name: _____ 29

Curriculum Connection
LS.2

Experiment - Vertebrates Vs Invertebrates

Research Question

What are we learning more about?

Can invertebrates or vertebrates support more weight?

Materials

What do we need for our activity?

1) [illegible] to make two animals
2) One pipe [illegible]
3) Weights – wood [illegible] will work

Method

How do we complete the [illegible] time

1) Make an animal like the one in the pictur[illegible]
   i. Make 4 legs
   ii. Make a body
   iii. Attach the legs to the body
   iv. Put a head on the body
2) Make another animal using the same steps as above

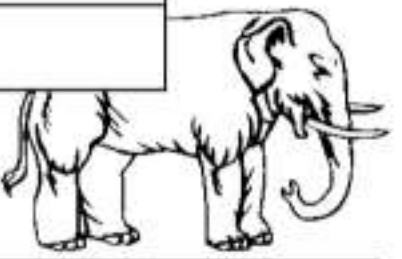
3) Put a pipe cleaner through the body to act as a backbone
4) Put one block on each animal and observe
5) Keep adding blocks until one of the animals collapses

Name: _____ 30

Curriculum Connection
LS.2

Observations | How many blocks did each type of animal hold?

	Number of Blocks
Vertebrates	
Invertebrates	



Results | Answer the questions below

1) W... ...an hold more weight?

V...	Invertebrates

2) Which type ... ...s do ... ...are usually bigger?

Verte...	Invertebrates

3) Why do you think the bi... ...nal... ...tebrates?

4) If an invertebrate animal gained a lot of weight, wh... ...h...

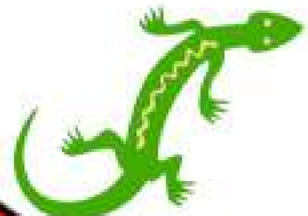
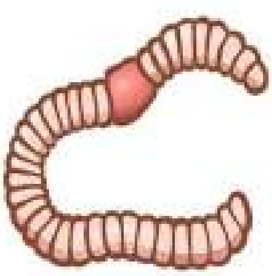
5) Write a list of animals that are invertebrates and vertebrates

Invertebrates	Vertebrates

Name: ______________________ 32

Vertebrates or Invertebrates?

Backbone or Not? Circle whether the animal is a vertebrate or invertebrate

	Vertebrate Or Invertebrate		Vertebrate Or Invertebrate
	Vertebrate Or Invertebrate		Vertebrate Or Invertebrate
	Vertebrate Or Invertebrate		Vertebrate Or Invertebrate
	Vertebrate Or Invertebrate		Vertebrate Or Invertebrate
	Vertebrate Or Invertebrate		Vertebrate Or Invertebrate

Name: _____ 33

Curriculum Connection
LS.2

Physical Characteristics of Animals

Word Search

Find the words from the word bank

❑ Animals	❑ Invertebrate	❑ Vertebrate	❑ Backbone	❑ Insects
❑ Mammals	❑ Reptiles	❑ Birds	❑ Worms	❑ Spiders

C	J			N	R	U	W	C	M	H	T	A	Q	M	E	F	J	Y	T
P					S	E	C	T	S	P	I	D	E	R	S	X	E	D
S			Y				W	L	Z	L	I	M	G	N	W	V	K	K	V
I	N	V			E			A	T	E	X	G	J	H	G	J	O	W
W	O	R	M	S					D	P	T	J	F	G	P	A	X	B
H	A	H	J	B	A			B			H	V	W	T	B	L	H	I
R	E	P	T	I	L	E	S					N	I	M	A	L	S	R
V	E	R	T	E	B	R	A	T	E			M		M	A	L	S	D
O	E	W	G	H	K	H	V	Q	V	Z						F	X	S
Y	A	S	I	G	J	J	U	K	K	G	U	C					Z	U

Word Scramble

Unscramble the words from the word bank

MMAAMLS		VBRETREATE	
AMINLAS		IECTNSS	
WROSM		BRDIS	
RLPTEIES		ITREAENRTBVE	
BBOACKNE		SDIRPES	

Name: _____ 34

Curriculum Connection
LS.3

Meeting Our Needs - Locomotion

Meeting our Needs

Locomotion means how people move from one place to another. Animals have body parts that allow them to move in a certain way. The number of legs an animal has affects how it moves.

1) Legg ing using legs

Most s to move. Animals can have a different number of legs gs thousands of legs. Snails have no legs while m s can one thousand legs!

Humans are **bipe** w n two legs. Penguins and humans are the only bipedal creatures y w two legs.

A **quadruped** animal walks on fo Most mammals and reptiles are quadruped. Some ex es are deer, cows, lizards, lions, moose, cats, a es.

2) Limbless – moving without legs using their bodies in ad

Animals that are limbless have no legs. These animals use the ove them around. They have skin that can move in waves back and forth. ey use the waves to push them forward or backwards. Examples of limbless animals are snakes, slugs, snails, worms, and even seals!

3) Rolling - rotating the body over the land

Some animals will move their bodies into a loop. They do this so they can roll down a hill or let the wind roll them. Examples of animals that roll are hedgehogs, armadillos, and caterpillars.

Name: _____ 35

Curriculum Connection
LS.3

True or False

Circle whether the statement is true or false

1) A bipedal animal has 4 legs	True	False
2) A bear only has two legs	True	False
3) Snails have no legs	True	False
4) Hedgehogs will roll to move fast	True	False
5) Penguins are bipedal animals	True	False

Making C...

What does this reading remind you of in your life?

Locomotion

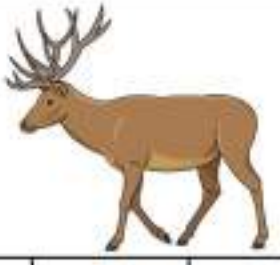
Circle the locomotion ...

Legs	Roll	Limbless

Legs	Roll	Limbless

Legs	Roll	Limbless

Legs	Roll	Limbless



Legs	Roll	Limbless

Legs	Roll	Limbless

Name: _____ 36

Curriculum Connection
LS.3

Tracking Animals - Animal Tracks

Tracking Animals – Animal Tracks

Humans aren't the only ones who leave evidence of their actions as they move around. Just like we can analyze the footprints of humans, we can also track animals based on the animal tracks they leave in th ound. An **animal track** is an imprint left in the soil, snow, mu r ground surface by an animal walking across it. An by hunters to track their prey and by naturalists to identify animals a give

If the an a cle k, the species of the animal can be determined based on the combi n of features of the feet. Some features we can look for in an animal trac

- Width/length – A fox print is much s han a rint
- Number of Toes – Bears have five toes, whil es a have four
- Nails – Canines tend to leave a nail print while felines don't since they can retract their nails.
- Depth – The heavier the animal, the deeper the print will be. A moose track will be deeper than a deer track.
- Webbing – Webbing is usually found on animals that swim a lot in the water
- Stride and Straddle – The stride length can set animals apart. A stride is measured from the heel of one print to the heel of the next print on the same side. Straddle is the width of the steps taken. It is measured from the outside of the right track to the outside of the left track.

Name: _____ 37

Curriculum Connection
LS.3

True or False

Is the statement true or false?

1. Hunters and naturalists track animals using their prints/tracks	True	False
2. A track is an impression left in the ground by an animal	True	False
3. Straddle is a measurement of the stride length of an animal	True	False
4. Tracks are left in snow, soil, mud, or other ground surface	True	False
5. A deer will leave a deeper impression in the ground than a moose	True	False

Visualizing

you were picturing while you were reading. Explain the picture

Questions

Use information from the text t you er

1) What is an animal track? Why are animal tracks evidence of anim

2) How can hunters and naturalists figure out which animal left a track? What do they look for in the track?

Name: _____ 41

Curriculum Connection
L5.3

Experiment – Animal Tracks

Research Question

How are animal tracks different from each other?

When animals walk, they create tracks in the ground that are unique to that animal community. We can track animals if we know their tracks/footprint.

Materials

What do we need?

- ✓
- ✓ Parchm
- ✓ Toothpicks
- ✓ Animal tracks guide o
  your own research guide

Lion Print

Method

How do we complete the e im

1) Use the "Animal Tracks Guide" or take time to rese the favourite animals.
2) Draw the tracks on the back of this page
3) Take a small piece of clay and roll it into ball
4) Flatten the ball into a cookie shape. Make one cookie for each track you want to make.
5) Place the flattened clay on a piece of parchment paper
6) Use your finger and toothpick to create the animal tracks
7) Set the tracks aside so they can dry

Name: _____ 42

Curriculum Connection
L5.3

Plan

Draw some animal prints you want to make

Research

Answer the questions b

1) Why is it helpful for scientists to be able to track an lo is lp them understand a species' community?

2) Make a connection – What animal tracks do you see in your neighbourhood?

Name: _____ 47

Curriculum Connection
LS.3

Adapting Species

What Does Adapting Mean?

Plants and animals are designed to live and thrive in their habitat. They have **adapted**, which means their bodies have changed to allow them to survive in the conditions they live in.

Over [illegible] species will change so they have characteristics that help them survive. Evolution [illegible] that explains how animals adapt. **Evolution** is the process by which differ[illegible]op and change into more advanced versions that allow them to survive [illegible] live in.

Charles Darwin

In 1859, Charles Darwi[illegible] evolution. He believed that [illegible] natural selection. **Natural selection** is th[illegible] where certain individuals of a species a[illegible] surviving than others and will therefore, survi[illegible] have more children (reproduce).

When they have children, their children are like the[illegible]. F[illegible] rabbits live all over and have dark or white fur. In places where there is a lo[illegible] would be an advantage as the rabbits could hide from predators easi[illegible]. W[illegible] white rabbits surviving in places with heavy snowfall, more white furred rabbits have babies and their babies will also have white fur. Eventually all the rabbits living in a cold place will have white fur as they are the ones who survive.

Survival of the Fittest

The phrase **survival of the fittest** refers to the animals who are best able to survive in their environment. The white furred rabbits are the fittest bunnies for an environment that receives heavy snowfall.

The white furred rabbit has adapted to its habitat. Its adaptation is its white fur.

Name: _____ 48

Curriculum Connection
LS.3

True or False

Circle whether the statement is true or false

1. Adapting to an environment means animals change so they can survive	True	False
2. Not all plants and animals can survive in all environments	True	False
3. A white furred rabbit will survive best in desert environments	True	False
4. Charles Darwin came up with his theory of evolution in 1859	True	False
5. All anim[illegible] species are the same (all rabbits are the same)	True	False

Questi[illegible]

[illegible]questions about your machine below

How do anim[illegible] survive in their environment?

Instructions

Which beaks would be best for digging[illegible] see[illegible] grabbing?

Medium Ground Finch

Warbler Finch

Tr[illegible]inch

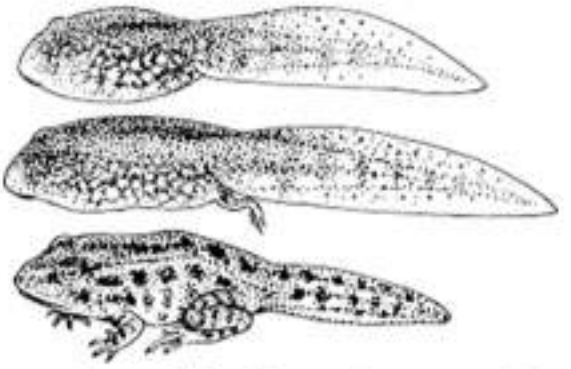
Name: _____ 51

Curriculum Connection
LS.3

Adaptations of Young Animals

Animal Adaptations

While an animal grows during its life cycle, it needs to be able to survive in its environment. The good news is that animals have adapted to survive in their environment. **Adapted** means that their bodies have changed over time to make sure they can survive in the environment they are in.



Example

Tadpole

A tadpole has [illegible] can [illegible] in the water. It has a tail that allows them to [illegible]. Tadpoles can grow their tails longer if there are a lot of predators near them. This allows them to swim faster and look bigger.

Tadpoles also have a body that is [illegible] to cut through the water. These adaptations have allowed tadpoles to survive in the habitat of water.

Frog

A frog adapts to its new life on land and in the water. If a frog spends [illegible] on land, they will have very strong legs. They need strong legs to jump so they can escape predators or catch prey. Some frogs that swim a lot have webbed feet. This allows them to swim faster and longer. Frogs have adapted to be able to survive in both environments.

They have lungs that allow them to breathe through their skin. They cannot breathe underwater, but they can hold their breath for 4-7 hours!

Frogs have changed colour over time as well. Frogs that live near ponds are green with dark spots. Some frogs are brighter green, depending on the habitat they live in. This allows them to blend in with their surroundings.

Name: _____ 52

Curriculum Connection
LS.3

True or False

Circle whether the statement is true or false

1. An animal adaptation means the animal changed so it can survive	True	False
2. Tadpoles are good at living in the water	True	False
3. Frogs are better at living under water than on land	True	False
4. Frogs need strong legs to jump on land	True	False
5. A tadpo[illegible] a square body that makes it hard to cut through water	True	False

Visuali[illegible]

[illegible] were picturing while you were reading. Explain the picture

Questions

Use information from the text to support [illegible] we[illegible]

1) Why is a tadpole good at living in the water? How can it change t[illegible] [illegible] better?

2) Why are frogs good at living on land and in the water?

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Curriculum Connection
LS.3

Terrestrial Habitat - Desert

Terrestrial Habitats

Desert habitats are areas of land that do not get much precipitation (rain or snow). Desert habitats are therefore **barren**, meaning they have little to no plants growing. Because of this, not many animals live in desert habitats as most animals ne[illegible]lants and water to survive.

The [illegible]anisms that can survive in the desert ha[illegible]s that give them an advantage to surviving in desert conditions.

Hot an[illegible]d Dese

Since deserts [illegible]ize[illegible] little precipitation, desert habitats are in cold climates as we[illegible]limate[illegible]rctic is a desert because it receives little snow.

Characteristics of a He[illegible]D[illegible]oitat

Temperature	Hot all year w[illegible]per[illegible]n 22 - 40˚C
Precipitation	Very little rainfall, arou[illegible]n (25[illegible]er year
Plant Life	Cactus, Tumbleweed, Wi[illegible]lowers[illegible], Me[illegible]Poppies
Animals	Bat, Quail, Armadillo, Coyotes, [illegible]Can[illegible]
Adaptations	• Long roots go deep underground [illegible]d out t[illegible]vater • Plants like cacti can store water in t[illegible]an[illegible]es • Animals like camels can store water in t[illegible]bod • Animals burrow underground to escape the hea[illegible]

Characteristics of a Cold Desert Habitat

Temperature	Cool summers and freezing winters. Temperatures between 10 to -40˚C
Precipitation	Very little rain or snow, around 20-40 cm per year
Plant Life	Pearlwort, Rice Grass, Sagebrush, Saltbush, Black Sage
Animals	Moles, Weasels, Arctic Fox, Penguins, Jerboas, Snow Leopard, Camels
Adaptations	• Plants can grow in dry soils that have a lot of salt in the soil • Plants grow in groups so they can stay warm and sheltered • Animals have thick furs that keep them warm and store water • Some animals like polar bears have antifreeze proteins in their blood keeping them warmer in freezing temperatures

Name: _____ 54

Curriculum Connection
LS.3

Questions Answer the questions below using evidence from the text

1) What is a desert? Is a desert always hot?

2) Wh[illegible]e plants made to survive in the desert? List 3.

Draw Draw a desert habitat with organisms y[illegible] your habitat

Name: _____ 60

Curriculum Connection
LS.3

Terrestrial Habitat - Grasslands

What are Grassland Habitats?

A **grassland habitat** is an area of land that is wide open, with mostly grasses and flowers and not many trees.

Grasslands do not get as much rain as forests, but they get more rain than deserts. This is why some low growing plants can survive, but very few tall trees can grow. Without tall trees, there are no forests in grassland habitats.

Examples of Grassland Habitats

Grasslands are found between deserts and forests. They are located all over the world but have different names depending on where they are located.

- Prairies – In North America, grasslands are called prairies. In Canada, the prairie grasslands are located in Alberta, Saskatchewan, and Manitoba. The Prairies are great areas for farming because they are flat and have rich soil.
- Steppes – In Russia, Asia, and Ukraine, the steppe region has cold and grassy habitat. They also have no trees and tend to have short grasses.
- Pampas – The grasslands in South America are called pampas. They have flat lands with no trees and really tall grass, as tall as 3 metres!

Characteristics of Grassland Habitats

Temperature	Depending on the latitude and season, temperatures can range from -20°C to 30°C
Precipitation	Average rainfall, with amounts ranging from 25 cm to 100 cm
Plant Life	Various grasses including purple needlegrass, blue grama, buffalo grass, blue fescue, rather grass, and lemon grass.
Animals	Tiger, deer, lion, hyena, cheetah, zebra, bison, kangaroo, elephant
Adaptations	• Animals need speed because they can be seen from long distances • Camouflage because animals can be seen from long distances • Burrowing skills because animals cannot hide in trees • Plants need to be able to survive in windy conditions • Grasses have narrow leaves to minimize water loss

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Curriculum Connection
L5.3

True or False

Circle whether the statement is true or false

1) There are no grasslands in Canada	True	False
2) Grasslands are home to lions, tigers, and zebras	True	False
3) Lions live in the prairie grasslands in Canada	True	False
4) Prairie grasslands are good for farming	True	False
5) Pampa[illegible]s is very short	True	False

Questi[illegible]

[illegible]tions do you have after reading the information?

1)	
2)	

Questions

Use information from the text to [illegible]rt y[illegible]

1) What is the climate (temperature and precipitation) like [illegible]sla[illegible]

2) What adaptations do animals in grasslands have that help them survive?

Curriculum Connection
LS.3

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____ Mark

2 Truths and a Lie - Can you find the one that's not true?

	In Russia, Asia, and Ukraine, the steppe region is a dry and grassy habitat.
	The grasslands in South America are called the pampas. They also have no trees and tend to have short grasses.
	In North America, grasslands are called prairies. In Canada, they are located in Alberta, Saskatchewan, and Manitoba.

Name: _____ Mark

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Name: _____ Mark

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	In North America, grasslands are called prairies. In Canada, they are located in Alberta, Saskatchewan, and Manitoba.

Curriculum Connection
L5.3

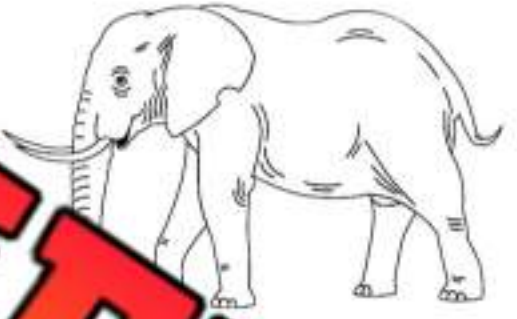
Grassland Organisms And Their Parts

Grassland Animals
Grasslands are wide, open spaces filled with...you guessed it, grass! Even though this might seem like a simple environment, it takes some amazing adaptations to survive here.

Prairie Grass: The Root of Survival
Prairie grass is a common plant found in grasslands. Here's how it thrives:

- Deep R[illegible]: Prairie grass has incredibly deep roots, some going down 5 meters into the so[illegible] roots help the grass reach water deep underground and survive fires beca[illegible]re safe below ground.
- Fl[illegible] Stems: [illegible]s of prairie grass are flexible and can bend in the wind, preventing [illegible]eak during the strong winds that often sweep across grasslands.

African Elephants: The [illegible]
African Elephants are the [illegible]nd ar[illegible] are often found in the grasslands [illegible]a. H[illegible] are built to survive:



- Big Ears: Elephants have large ears which they [illegible]o keep themselves cool in the hot sun.
- Trunks: An elephant's trunk is a wonderful tool. [illegible] gathe[illegible]od, drinking water, and even as a snorkel when swimming!
- Tusks: Their long tusks, which are actually overgrown teeth, hel[illegible]ater and strip bark from trees for food.

Prairie Dogs: The Underground Engineers
Prairie dogs are small, burrowing animals native to the grasslands of North America. Here's how they adapt:

- Sharp Claws: Prairie dogs have sharp claws that are perfect for digging. They live in underground burrows that provide protection from predators and harsh weather.
- Alertness: Prairie dogs are very alert and communicate with each other using a complex system of barks and chirps to warn about approaching danger.
- Small Size: Their small size helps them move quickly and escape from larger predators.

Name: _____ 64

Curriculum Connection
LS.3

Draw Draw the organism and label its parts that help it survive. Then explain why it can survive in its environment

Prairie Grass

nt

Prairie Dog

Name: _____ 73

Curriculum Connection
LS.3

Basic Needs of Plants

What Do Plants Need To Survive?

Plants are very similar to us. They need certain things to live and grow. We call the things you must have, **survival needs**. Plants need 5 basic things: **light, water, air, space,** and **warmth**.

Light

Without [illegible] starve. Plants need light so they can make [illegible] photosynthesis.

Water

Plants need water to [illegible] around the plant. Water moves from the roo[illegible]plant[illegible]em, and into the leaves. The water carries nutrients from the soil a[illegible]spre[illegible] throughout the plant.

Air

Plants need air to make food. Plants use air to [illegible]e thei[illegible]through photosynthesis. They use the carbon dioxide in the a[illegible]k yumm[illegible]rs and starches for the plant to eat.

Space

All plants need space to grow in order to survive. The leaves on branch[illegible]ill not grow without room. The roots also need space to grow. If plants are too close, the roots cannot grow enough, and the plant will not grow as big.

Warmth

Plants grow well in certain temperatures, depending on the plant. Some plants can survive in colder temperatures, like cedar trees. Others can survive in warmer temperatures like the desert. Either way, both need some heat in order to survive because if it gets too cold, the plant begins to shut down.

Name: _____ 74

Curriculum Connection
LS.3

Questions

Use information from the text to support your answer

1) What are the 5 basic survival needs for a plant?

2) Why do[illegible] need space in order to survive?

Making Connections

[illegible] does [illegible]ding remind you of?

True or False

Circle whether the statement is true or false

1. Light is needed for plants to create their own food	True	False
2. Plants can grow in any temperature	True	False
3. Cedar trees can survive in cold temperatures	True	False
4. Plants need space for their leaves and roots to grow	True	False
5. All plants need some heat	True	False

Curriculum Connection
LS.3

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ | Mark

What do the 5 basic needs do for plants?

Light	
Water	
Air	
Space	
Warmth	

Name: _____ | Mark

What do the 5 basic needs do for plants?

Light	
Water	
Air	
Space	
Warmth	

Name: _____ | Mark

What do the 5 basic needs do for plants?

Light	
Water	
Air	
Space	
Warmth	

Name: _____ | Mark

What do the 5 basic needs do for plants?

Light	
Water	
Air	
Space	
Warmth	

Name: _____ 76

Curriculum Connection
LS.3

Parts of a Plant

Diagram Label the parts of the plant below and then colour the picture

Plants have 5 main parts that allow them to meet their basic needs. Each part needs to be working for the plant to grow and survive.

Word Bank

em Roots Flower Leaf Seeds

Name: _____ 77

Curriculum Connection
LS.3

Parts of a Plant – Roots

What is the Root?

The root of a plant is the part that is underground. The bigger the plant, the bigger the root will be.

Roots Three Main Jobs

The roots of a plant are important for these reasons:

1) They draw water and nutrients up out of the soil for the plant to use
2) The roots also hold the plant in the ground and keep it upright
3) The roots store food for the plant

Eating Roots

Yes, we eat root vegetables. These are plants grown underground. Commonly eaten root vegetables are turnips, carrots, ginger, garlic, potatoes, and beets.

True or False Is the statement true or false?

1) A carrot is a root vegetable because it grows underg		False
2) Strawberries are root vegetables that grow underground		False
3) The larger the root, the larger the plant will be		False
4) Roots bring water from the soil up to the plant	True	False
5) A roots only job is to hold the plant upright	True	False

Explain What are the 3 main things that roots do for plants

1)	
2)	
3)	

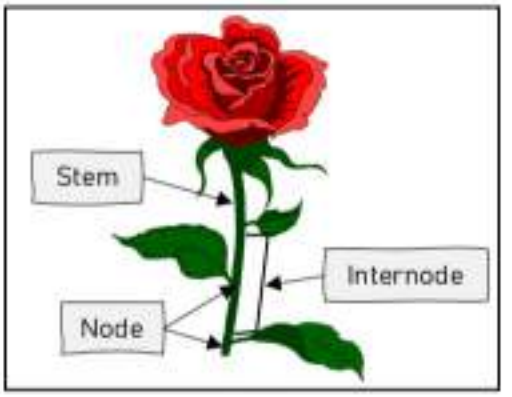
Name: _____ 78

Curriculum Connection
LS.3

Parts of a Plant - Stem

What is the Stem?

The stem of a plant is the part that comes out of the soil. A stem has **nodes** where branches grow. The stem between each node is called the **internode**.



Stem - Main Jobs

The stem h in jobs. They are:

1. To s so it can be upright
2. C water ts up and down to all parts of the plant.
3. Store nut
4. Grow new pla so t grow bigger

Eating Stems

Stems are edible. Many people oce or stems. But, the most popular stems we celer aqus, and rhubarb. Yum!

Question Answer the question below

Why is the stem important? List at least 3 jobs they do f t.

Visualizing Draw what you were picturing while you were reading. Explain the picture

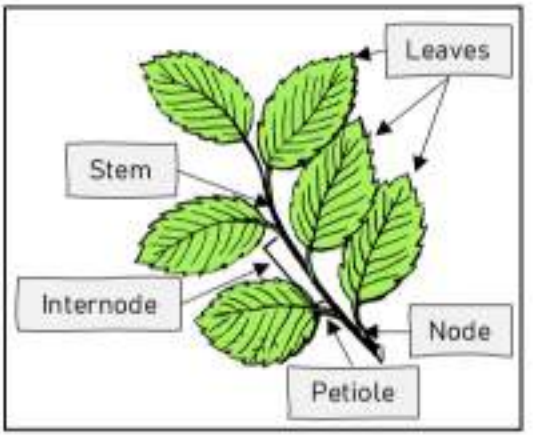
Name: _____ 79

Curriculum Connection
L5.3

Parts of a Plant - Leaves

What Are Leaves?

Leaves are an important part of the plant that hang off the stem and petioles of a plant. Leaves have little holes in them that allow water and air to come and go.



Main Jobs – Leaves

Leaves ma[illegible]or the plant. They do so by:

1. Bri[illegible]hine because they are flat
2. Bring[illegible]n wate[illegible] into the plant
3. Make food b[illegible]t[illegible]light[illegible] and carbon dioxide through the process of photosynthesis

Eating Leaves

You should not eat leaves from a[illegible], bu[illegible]e good for us. Spinach, mint, and lettuce are all examp[illegible]leaves[illegible]nly eat.

Word Search — Find the words!

Leaf	Stem	Node	Petiole
Internode	Light	Food	Water

M G N W V K K V X G
J H G J O P W P U Z
N B E D L E P T J D
S O F G I T P A O F
T X D H G I A O A W
E H J E H O F E H A
M V W T T L L B L T
E H I X Q E Q F G E
I N T E R N O D E R
O E W G H K H V Q V

Qu[illegible]s — [illegible]uestions

1) How do[illegible]ke f[illegible]

2) Can we eat leaves? Explain.

Name: _____ 81

Curriculum Connection
LS.3

Parts of a Plant – Flower

What Are Flowers?

A **flower** is the part of the plant that makes seeds. Flowers have petals that are nice to look at. The flowers attract pollinators, like bees, bats, butterflies and birds.

Main Jobs – wers

1. Make
2. At bees, bats, butterflies and birds
3. Ma it with de. Without seeds, we would have no new plants

Eating Flowers

We do eat some flowers, b at are sa Humans do eat hibiscus, dandelions, and lavender. In addition, we eat the that The most popular fruits eaten in Canada are bananas, apples, strawberri es, or nd raspberries.

Fill in the blanks — What word is missing

1. The flower is the part of the plant that makes _____
2. Flowers have _____ that help attract _____.
3. Flowers make _____ with _____ in
4. We eat some flowers, but not all are _____ to eat.

Questioning — Write two questions you have about flowers

1)	
2)	

Name: _____ 82

Curriculum Connection
LS.3

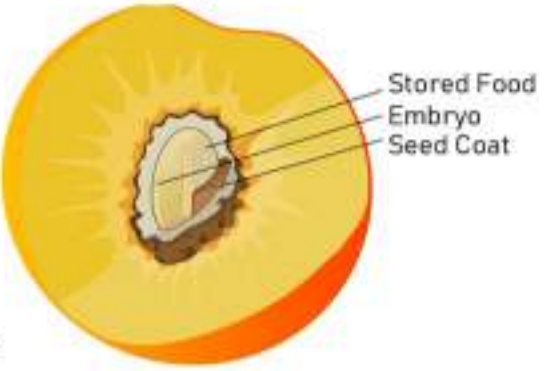
Parts of a Plant - Seeds

What Are Seeds?

Seeds are little cases with a baby plant inside. In flowering plants, the flower produces the seeds that are later spread on the soil surrounding it. Seeds are important because plants grow from seeds. Without seeds, we wouldn't have plants in the first place!

There are 3 main parts of a seed:

1) Seed [illegible]ase that protects the embryo inside
2) Em[illegible]inside the seed coat
3) S[illegible] Food – [illegible]o eats the stored food



Eating Seeds

When you eat a fr[illegible] have [illegible]en the seeds inside. For example, a [illegible] seed [illegible] which is why it is a fruit. You can eat these seeds with no problems. Othe[illegible] se[illegible] unflower seeds, sesame seeds, flaxseeds, pumpkin seeds, and chia seed[illegible] seed[illegible] really good for you!

Multiple Choice — Circle the correct answer

1) Seeds are little cases with a baby what inside?	Flow[illegible]	Plant
2) The seed coat protects the	Emb[illegible]	[illegible]wer
3) The stored food is eaten by the	Em[illegible]	[illegible]wer
4) The embryo is a tiny	Plant	Seed
5) Seeds grow into _____ when planted in soil	Animals	Plants

Questions — Answer the questions below

1) Why are seeds so important?

2) What is the important part inside a seed? What will happen to it if it is given food?

Name: _____ 83

Curriculum Connection
L5.3

Investigating Plants

Directions Find a plant and label its parts

Draw the plant and label its parts

Word Bank

1) Stem
2) Petal
3) Leaf
5) Petiole
6) Flower
7) Roots
8) Fruit

ll
all these
arts visible

Describe Describe the plant's characteristics

Colour	
Size	
Shape of Leaves	
Shape of Flower	

Name: _____ 84

Curriculum Connection
LS.3

Seed Plant – Life Cycle

Seeds vs Bulbs

All plants begin their life as seeds, however, some plants will live underground in the form of a bulb. A **bulb** is a plant that lives underground and has its leaves grow up through the surface. Garlic is an example of a bulb. All other forms of pl are seed plants.

Mo lants live one or two seasons and most bulb plants are perennials, which e than 2 seasons. This is because they have different life cycles.

Life Cycle of a Se

1. **Seed –** The t will l ife as a seed. The seed has a hard shell that protects the

2. **Germination –** The seed falls the s the water and warmth from the air and the soil. This start process ion, which is when a plant grows from a seed to a sprou eed w d split in the soil and a sprout will form.

3. **Growth** – The plant will keep growing through the process f ph The plant provides its own food and will grow if it receives its ba h

4. **Reproduction –** The flowers on a plant will produce seeds when they have been pollinated. In fruit producing plants, fruit will grow on the flowers at this stage.

5. **Spreading Seeds** – The seeds from the fruit or from the flowers will spread as animals eat them or as the wind blows them away. This begins the life cycle of a plant all over again!

Name: _____ 85

Curriculum Connection
LS.3

Questions

Use information from the text to support your answer

1) What is the difference between a bulb plant and a seed plant?

2) What do[illegible]ermination of a seed mean?

Ordering

Put the [illegible]es [illegible] in order from first to last – 1 to 5




True or False

Circle whether the statement is true or false

1) Germination is when the seed coat splits open	True	False
2) A seed plant will continue to grow year after year	True	False
3) A perennial plant is a plant that grows for more than 2 seasons	True	False
4) A plant will continue growing even if it doesn't have its basic needs met	True	False
5) Only the wind spreads seeds on the soil	True	False

Name: _____ 86

Curriculum Connection
LS.3

Seed Plant – Describe and Draw

Explain Describe each stage of a seed-plant's life cycle

Seed	
Germin	
Growth	
Reproduction	
Spreading Seeds	

Draw Draw each stage of a seed-plant's life cycle

Seed	Germination	Growth	Reproduction	Spreading Seeds

Name: _____ 87

Curriculum Connection
LS.3

Lab - Germinate Seeds on a Window

Research Question What are we trying to learn more about?

Will a seed germinate (sprout) without soil if it is given sunlight and water?

Hypothesis What do you think will happen?

Materials What do you need for this experiment?

- Small plastic zipper storage bag
- Dried, uncooked beans or seeds
- Paper towels
- Water

Procedure What do you need to do?

1. Cut the paper towel in half and fold it a few times so it will fit into the zipper storage bag
2. Soak the paper towel in water and slide it into the bag. Lay it flat
3. Put two beans or seeds about three centimeters from the bottom of the bag, on one side of the paper towel. Make sure they don't fall to the bottom of the bag or else they will sit in the water. You can roll up a piece of paper towel and put it on the bottom of the bag if the beans/seeds keep falling to the bottom.
4. Seal the bag part way, leaving an opening near the top so the growing plants can get some air
5. Tape the bag to the window so that the beans are facing indoors, so you can watch them grow.
6. Optional – do the same experiment but put the plastic bag in a dark closet. See if this grows better or worse.

Name: _____ 88

Curriculum Connection
LS.3

Observations Write how many days it has been and draw what the seed looks like

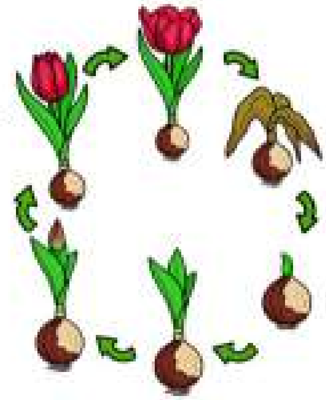
Day	What is happening to the seed?

Day	What is happening to the seed?

Curriculum Connection
LS3

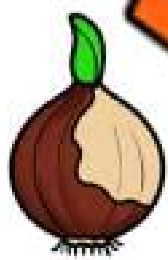
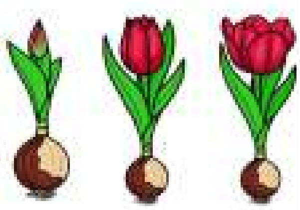
Bulb Plants – Life Cycle

Bulb Plants



A bulb plant lives through the winter inside the ground. A bulb will continue to grow year after year until it is harvested (pulled out of the ground). Bulb plants complete their life cycle underground.

Life Cyc[illegible] Pl[illegible]ts – Stages

1) [illegible]mant 	[illegible]lb[illegible]pares for winter by forming roots in the ground. [illegible]gathe[illegible] from the soil around it. The bulb is in the [illegible]ge. [illegible] half-asleep as they don't grow in size o[illegible] ab[illegible]nd. But, they do quietly work away at growin[illegible] and [illegible] roots.
2) Waking Up 	As the temperature wa[illegible] in [illegible] bulb begins to grow. You will see the sho[illegible] grow[illegible]ough the soil.
3) Bloom 	The bulb blooms after spending the winter and [illegible] months gathering energy. It has rested and gotten enough light, water, and warmth to bloom. This means it will turn into a plant that we can see above the ground.
4) Falling Asleep 	The bulb plant will fade into the ground as the temperatures get colder. The bulb is not dying! It is saving and gathering energy so it can grow again next year.

Name: _____ 90

Curriculum Connection
LS.3

Matching Write the letter from the description beside each stage

	Dormant	a) The bulb feels the warmer weather. It will grow a shoot.
	Waking Up	b) The bulb prepares for winter. It is half asleep as it doesn't grow.
	Bloom	c) The plant grows bigger. The flower will open up.
	Falling Asleep	d) The bulb feels the cold air and the shorter days.

Question Answ[illegible]tion

1) Where does a bulb plant go throug[illegible]nt [illegible]cle?

Underground [illegible]e G[illegible]

2) What is the difference between a bulb plan[illegible]a s[illegible]

_____

_____

_____

Visualizing Draw what you were picturing while you were reading. Explain the picture

_____

_____

_____

_____

_____

Name: _____ 92

Curriculum Connection
LS.3

How Seeds Spread

How are Seeds Distributed?

When a plant grows into an adult plant, it is ready to make new plants. The plant produces seeds that are spread naturally in the environment. The wind and animals both spread seeds around so that plants can grow all over our environment.

How the W eads Seeds

Seeds f re light. They can be carried long distances by the w ther pla winged" seeds that are shaped like helicopters. These seeds fa ees fly to new places as they fall.

A **samara** is rd w inged seed. If these seeds fell straight down under a tree, they wou w bec ey wouldn't have enough space.

How Animals Spread Seeds

Animals spread seeds in a few different ways.

1. The most common way is when animals eat f em. When the animal travels to a new area, they poop out these s y of seeds will germinate in the new area and grow there.
2. Animals can also spread seeds by collecting them and bringing them locations. This can happen accidentally when seeds have hooks on them that attach to animals. An animal might brush up against a plant and the seeds can attach to the animal who then brings it to a new place, where they fall off.

3. Squirrels have a special relationship with oak trees. Squirrels eat acorns, which contain the seed of an oak tree. They take acorns and bury them in different places all over. They do this so they can eat these acorns later. Quite often, they forget where they buried the acorns and they end up growing into oak trees.

Name: _____ 93

Curriculum Connection
LS.3

Questions

Use information from the text to support your answer

1) How are seeds spread throughout our environment?

2) Why squirrels need each other?	
What Squirrels Get	What Oak Trees Get

Questioning

Write two questions you have about the

1)	
2)	

True or False

Circle whether the statement is true or false

1) The acorns squirrels bury sometimes grow into oak trees	True	False
2) A samara is a winged seed that spins like a helicopter	True	False
3) Acorns under an oak tree often grow right beside the tree	True	False
4) Dandelion seeds are light and blow easily with the wind	True	False
5) Seeds are spread mostly by people	True	False

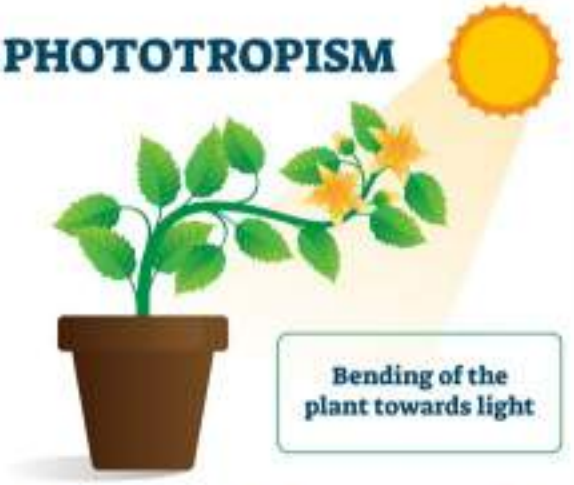
Name: _____ 95

Curriculum Connection
LS.4

Plants Responding to Light

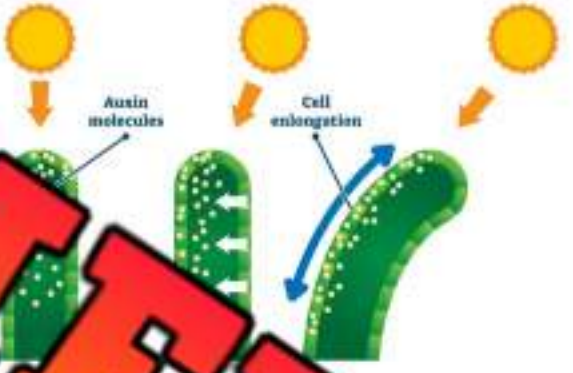
How Do Plants Respond To Light?

Plants need light in order to grow and stay alive. They will respond to light by growing towards light. This concept is known as phototropism.



What is Ph... ...pism?

Phototr... ...n... ...a plant grows towards light. Just ...w you t... ...head to look at something tha... ...nts ... have a way of knowing where t... ...is, an... ...grow towards it. This helps t... ...ener... need from the sun to survive.



The hormone auxin, is found on th... ...d side of a plant. It makes the plant longer on that side, so it can stretch further. This causes the ... to bend towards the light.

So, the next time you see a plant growing towards a ... ...w, ... because of phototropism!

Why Do Plants Grow Towards Light?

There are a few reasons why plants grow towards light:

1) Photosynthesis: Light is needed for the process of photosynthesis, where plants use energy from the sun to convert carbon dioxide and water into glucose (a type of sugar) and oxygen. This is how plants make their own food and energy.

2) Survival: By growing towards light, plants can maximize their chances of survival by getting as much energy from the sun as possible.

Name: _____ 96

Curriculum Connection
LS.4

True or False

Is the statement true or false?

1) Plants tend to grow away from light	True	False
2) On the shaded side of plants, you will find the auxin hormone	True	False
3) Auxin causes plants to stretch and get longer	True	False
4) Plants will bend and grow towards light	True	False
5) Plants need light as water is more important	True	False

Visualization

u were picturing while you were reading. Explain the picture

Questions

Answer the questions below using

1) What is phototropism? Why does it happen?

2) If plants didn't grow towards light, would they grow as well?

Name: _____ 97

Curriculum Connection
LS 4

Activity – Plants Responds to Light

Objective What are we learning more about?

To understand how plants respond to light and understand the concept of phototropism.

Materials What do we need?

- ✓ potte
- ✓ Cardbo
- ✓ Scissors
- ✓ Tape

Method How do we complete th imen

1) Cut a small hole (around 2 inches in dia r) o side of the cardboard box.

2) Place the potted plant inside the box and tape the box shut, leaving the hole open.

3) Place the box near a window where it will receive sunlight. The sunlight should only be able to enter the hole on the side of the box.

4) Observe the plant every day for one week. Make sure to keep watering the plant as you normally would.

Name: _____ 98

Curriculum Connection
LS.4

Activity – Plants Responds to Light

Observations What changes have happened to the plant each day

Time	Description of the Plant
Day 1	
Day 2	
Day 3	
Day 4	
Day 5	

Results What happened? Describe the changes to the plant

Name: _____ 102

Curriculum Connection
LS.4

Plants Responding to Water

Responding to Water

Just like we need water to stay hydrated and healthy, plants also need water to grow and thrive! But did you know plants have special ways to interact with water? They can even move and change depending on where water is.

1) Hydrotr[illegible] Following the Water Trail

Imagine i[illegible] stretch your arm to reach a glass of water from across the room. Well, [illegible] something similar through a process called hydrotropism!

In areas wh[illegible] ha[illegible] to find, like deserts, cacti have developed an amazing ability. Their roo[illegible] oward[illegible] urces hidden deep in the ground. This is how they find the water they ne[illegible] [illegible] ng sun.

But it's not just deser[illegible] at c[illegible]

Willow trees near rivers also send their roots towards the water. This way, they're always sure to get a drink!

2) Transpiration: The Plant's Water Cycle

Plants need to drink, but did you know they also sweat? They [illegible] his [illegible] called transpiration.

During transpiration, plants suck up water from the soil through th[illegible]ots. The water then travels up the stem and reaches the leaves. Here, it evaporates from tiny openings called stomata, cooling down the plant.

3) Germination: The Birth of a New Plant

Have you ever noticed that seeds need water to start growing? This is called germination. When a seed soaks up water, it begins to sprout and starts the growth of a new plant. Think about a bean seed you might plant in a cup at school. Once it gets water, it starts to grow roots and then a tiny stem. This is the start of a new bean plant, all thanks to water!

Name: _____ 103

Curriculum Connection
LS.4

True or False

Is the statement true or false?

1) Willow trees have roots that grow towards water, like a river	True	False
2) Cacti don't need water, so they do not respond to it	True	False
3) Some plants have roots that grow towards water	True	False
4) When you water a seed, it will germinate and sprout	True	False
5) Water will enter plants through transpiration	True	False

Visualizing

you were picturing while you were reading. Explain the picture

Questions

Answer the questions below using ... from ... ext

1) How do plants respond to water?

2) How does a willow tree growing near a river respond to water?

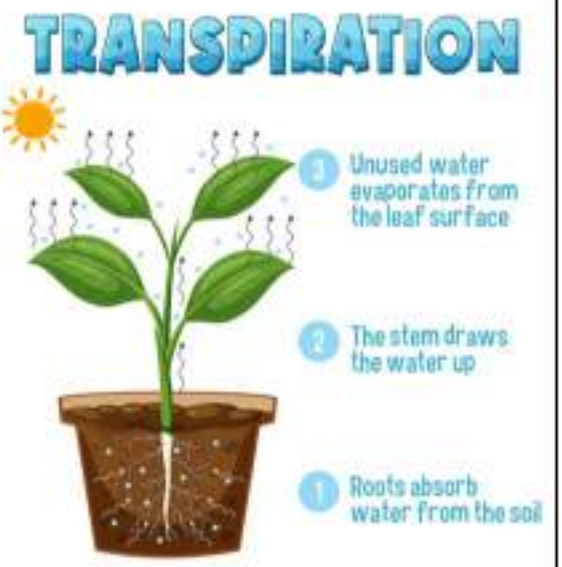
Name: _____ 106

Curriculum Connection
LS.4

How Plants Respond to Temperature

How Plants Respond to Temperature

Imagine if you wore a heavy winter jacket on a hot summer day! You'd feel uncomfortable, wouldn't you? Just like us, plants too respond to temperature. They have a way of knowing whether it's hot or cold and they chan behaviour accordingly.



A W e: the Heat

When th temp pl ts have to adjust to survive. Here's do it:

- Transpiration: Pla ater ir leaves to cool down, like how we sweat when it's hot! Cac es very slowly to save water.
- Growing Slowly: Some plants gro slowl to save energy. Bermuda grass is one such plant. It stays low to the dur mers.
- Shrinking Leaves: Some plants, like the desert ma ve sm aves to reduce water loss when it's hot.

Bundling Up: Plants in the Cold

When the temperature drops, plants have their own ways to keep warm.

- Going Dormant: Many trees, like oak and maple, drop their leaves and go into a "sleep" mode during winter. This is called dormancy.
- Growing Hairs: Some plants grow extra 'hairs' on their leaves to keep warm, like the 'woolly' leaves of the Lamb's Ear plant.
- Huddling Together: Snow tussock grass in cold places like New Zealand grows in bunches to help protect itself from the cold wind.

Name: _____ 107

Curriculum Connection
LS.4

True or False

Is the statement true or false?

1) Transpiration is like plant sweat.	True	False
2) Bermuda grass grows fast in the heat.	True	False
3) Plants can sleep, which is called going dormant.	True	False
4) All trees go dormant in the winter.	True	False
5) Cacti re[illegible]e water quickly when it's hot.	True	False

Visualizin[illegible]

[illegible]ou were picturing while you were reading. Explain the picture

Questions

Answer the questions below using [illegible] fro[illegible]ext

1) How do plants respond to rising temperatures? Give two example

2) What happens to many trees like oak and maple when the temperature drops, and why?

Name: _____ 108

Curriculum Connection
LS 4

Experiment - How Plants Respond

Research Question What do plants need to survive?

How do plants respond to light, water, and temperature?

Materials What do we need for our experiment?

1) 6 sma to plant seeds
2) Soil
3) W
4)
5) Shre ded p
6) Seeds – l e ccoli oi, and cauliflower germinate the fastest

Method How omple xperiment?

1) Fill 5 cups with soil
2) In the 6th cup, do not add soil. In add sh ded er
3) Add your seeds to the soil, about 2 cm d time h of the seed)
4) In one of the cups with soil, add a lot of see eth
5) Place one cup in a closet, where it won't get su
6) Place another cup in the fridge, where it is cold
7) Place four cups in a window where it will get the most sun e cups should be the one with a lot of seeds and one should be the shr d paper.
8) Water each of the cups two times a day. Do not water one of the two cups that are in the window (you should water the one cup with a lot of seeds)
9) Monitor the results by checking the cups each day

Hypothesis In which cup will the seed(s) grow the fastest?

Cup 1 In the Closet	**Cup 2** In the Fridge	**Cup 3** A lot of Seeds	**Cup 4** Window with Water	**Cup 5** Window no Water	**Cup 6** Shredded Paper

Name: _____ 109

Curriculum Connection
LS.4

Experiment – Basic Needs of Plants

Observations Have any of the seeds sprouted? Put a ☑ or an ☒

Day	Cup 1	Cup 2	Cup 3	Cup 4	Cup 5	Cup 6
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
15						
20						

Name: _____ 110

Curriculum Connection
LS 4

Results Explain what happened after the 20 days for each cup. Explain why the cup either grew a plant or did not.

Cup 1 In the Closet	
In t ridge	
Cup 3 A lot of Seeds	
Cup 4 Window with Water	
Cup 5 Window no Water	
Cup 6 Shredded Paper	

Name: _____ 112

Curriculum Connection
LS.5

Animal Senses

Animal Senses: The Amazing World of Sensory Organs

Animals use their ears, eyes, noses, tongues, and skin to experience the world around them. Every animal, including humans have different abilities for sensing the world. That is why some animals can see or hear better than others.

Ears: The Sound Catchers

Let's start with ears, which animals use to hear sounds. Ears pick up sound waves and send them to the brain, which interprets them as different sounds. Dogs, for instance, have excellent hearing and can hear things far away that humans can't hear at all!

Eyes: The Sight Providers

Next are eyes, which let animals see the world around them. Some animals, like owls, have fantastic eyesight and can see clearly in low light. Meanwhile, rabbits have eyes on the sides of their heads to watch for danger in all directions.

Nose: The Smell Detectors

A nose helps animals smell. This is really important for many animals. For example, a bear has such a good sense of smell that it can find food from miles away! Dogs use their noses to recognize their friends and find their way.

Tongue: The Taste Explorers

The tongue helps animals taste. Taste buds on the tongue let animals know if something is sweet, salty, sour, or bitter. Cats, for example, have fewer taste buds than humans, which is why they don't like sweet food.

Skin: The Touch Sensors

Finally, skin helps animals feel things through touch. Some animals, like dolphins, have very sensitive skin and can feel the smallest changes in water temperature. Even snakes, which don't have skin like ours, can feel vibrations through the ground with their bellies.

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Curriculum Connection
L.5.5

True or False

Is the statement true or false?

1) Dogs have poor hearing.	True	False
2) Owls have excellent eyesight.	True	False
3) Rabbits have eyes on the front of their heads.	True	False
4) A bear can smell food from miles away.	True	False
5) Cats lo[illegible]eet foods	True	False

Visuali[illegible]

[illegible] were picturing while you were reading. Explain the picture

Explain

Write 3 things you learned about anima[illegible]nse

1)	
2)	
3)	

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Curriculum Connection
L5.5

Super Hearing Animals

Super Hearing Animals

1. Dogs

Dogs have large, floppy ears that can move in the direction of sounds. They have more ear muscles than humans, which allow them to turn their ears like radar dish to focus on sounds.

2. Cats

Cats also have ears that move towards sounds. The shape of a cat's ear funnels sound into the ear canal, helping them to hear. They also have a large amount of tiny hairs on their ears which are highly sensitive to sound vibrations.

3. Bats

Bats have large ears compared to their body size which help them capture sound. They use these sounds to make a "map" of their surroundings. This is called echolocation.

4. Dolphins

Dolphins have small ear openings on the sides of their heads, but their main hearing organ is inside their heads. They receive sounds through their lower jaw which conducts the sound vibrations to their inner ear.

5. Owls

Owls have asymmetrical ears. One ear is higher than the other, which helps them locate sounds in multiple dimensions. The feathers around an owl's face also help direct sound into their ears.

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Curriculum Connection
L5.5

Explain How does each animal hear better than humans?

Dog	
Cat	
Do	
Bat	

True or False Circle whether th ement is true or false

1) Bats use echolocation to navigate their su dings.	True	False
2) Dolphins hear best through their ear openings o heads.	ue	False
3) Owls have ears at the same height.		False
4) Dogs can rotate their ears to focus on different sounds.		alse
5) Cats have tiny hair cells in their ears for hearing.	e	False

Think Which animal's hearing would you want to have? Explain.

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Curriculum Connection
L5.5

Many animals can hear better than humans because of the position and size of their ears. Choose an animal to draw and make changes to their ears and body that will help them be able to hear better.

Examples include:

1) Bigger ears
2) More ears
3) Ears at different heights
4) Ears on top of head
5) Ears that fold
6) Echolocation ability

Draw an animal with super hearing. Explain the animal's hearing below

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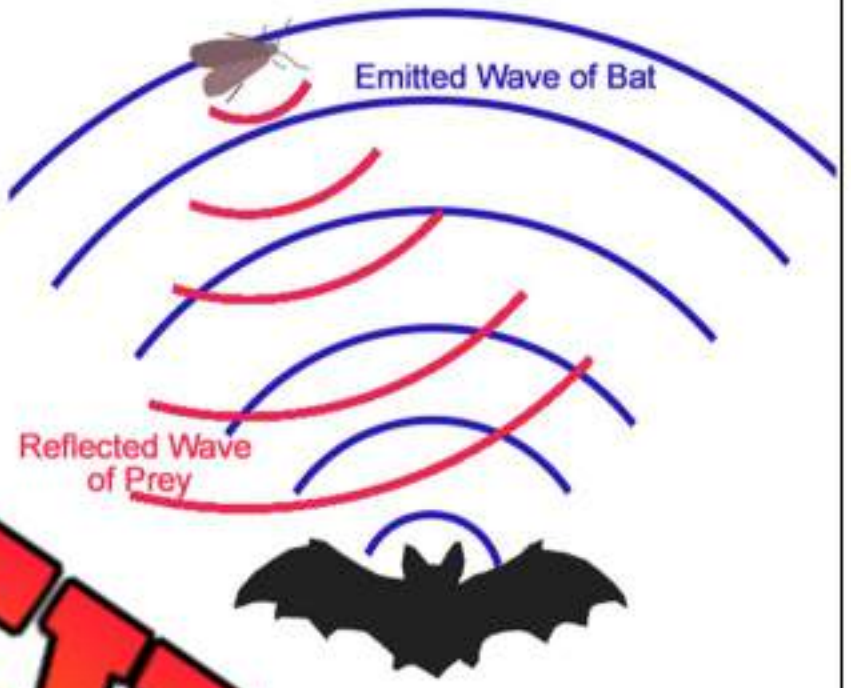
Curriculum Connection
L5.5

Echolocation

What is Echolocation?

Echolocation is how animals emit calls out to the environment and listen to the echoes of those calls when they bounce off various objects ne



s to tell them w they a elp them navigate g es. animal can tell how ey a from an object by measur long it takes for the sound they to em.

The relative intensity of the soun used nem where their surroundings are. This means if they make a loud sound, if a qui nd re them, then the object is further away. Echolocation allows animals to h s vision.

What Animals Use Echolocation?

The most notable animal that uses echolocation are bats. Other animals like toothed whales and dolphins also use echolocation. It is mainly used by birds and more specifically, cave dwelling birds.

Humans also use echolocation, but we need machines to do it as our ears and brains cannot process the calculations. When humans use echolocation, we call it **sonar**. Sonar devices are often used on boats to detect fish, structures, and anything under the boat. Sonar is used to detect things that have fallen to the bottom of oceans, such as aircrafts and sunken ships.

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Curriculum Connection
L5.5

Questions

Answer the questions below using evidence from the text

1) What is echolocation? Why is it used?

2) What an[illegible]use echolocation?

Draw

Draw a pictur[illegible]imal[illegible]holocation to navigate

Wordsearch

Find the words from the word bank

Word Bank	
Echo	Location
Reflect	Sound
Waves	Sonar
Bats	Dolphins

N W V D O L P H I N S K K V X G J
L O C A T I O N H G S J O W P U B
Z B E D P T J S F G O P A X H A A
H J H V W T B E L E N H E I X Q T
Q F G O E W G V H K A H C V Q V S
S O U N D Z I A O T R X H L Y F A
R E F L E C T W X Y A S O I G J J

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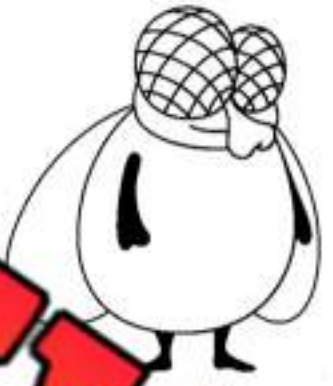
Curriculum Connection
L5.5

Infrared Sensing

What is Infrared Sensing?

Infrared radiation is a type of electromagnetic radiation with longer wavelengths and lower frequencies than visible light. Infrared radiation is emitted by all objects. Infrared radiation is all around us, and we are constantly exposed to it. It is emitted by the sun, fire, light b[illegible] ovens, heaters, and our own bodies.

Infr[illegible]sing is the ability to detect infrared radiation. Some animals have infrar[illegible] they can see the infrared radiation coming off objects. This helps th[illegible] see w[illegible]rk as they can see energy waves flowing off moving objects. Huma[illegible] see in[illegible]diation, but some other animals can.



Animals That Use Infrared[illegible]

Mosquitos

Mosquitos and other blood-sucking in[illegible]like be[illegible] their infrared vision to feed themselves. They [illegible]rare[illegible] sensing to see the body heat we emit in the form[illegible]. Since most mosquitos are nocturnal, they need to UV s[illegible] fin[illegible]at night.

Mosquitos have two "pit organs" on the sides of their head. T[illegible] infrared sensors, meaning they can sense the radiation we give off.

Vampire Bats

A vampire bat uses infrared sensors on their lips to locate blood vessels in their prey. Vampire bats are the only mammals to feed only on blood. Therefore, they need to be able to find blood in the blood vessels of their prey.

They are nocturnal animals, needing to see at night. They use their infrared sensors to see the carbon dioxide moving through the blood vessels. They often sneak up on sleeping cows, goats, or birds to suck the blood from their prey.

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Curriculum Connection
LS.5

True or False

Is the statement true or false?

1) For nocturnal animals, infrared sensing isn't important	True	False
2) Many blood-sucking insects have infrared sensing	True	False
3) The pit organs that mosquitos have help them see infrared radiation	True	False
4) Humans can see infrared radiation everywhere	True	False
5) Infrared [illegible]diation only comes off really hot objects	True	False

Visualizin[illegible]

[illegible]you were picturing while you were reading. Explain the picture

Questions

Answer the questions below using e[illegible]fro[illegible]ext

1) Why do nocturnal animals benefit from infrared sensing?

2) How do vampire bats use infrared sensing? Why do they need it?

Name: _____ 129

Curriculum Connection
LS.5

Magnetoreception

What is Magnetoreception?

Magnetoreception is the ability of some animals to sense and respond to the Earth's magnetic field. Imagine the Earth is like a big magnet, and it has north and south poles, just like a bar magnet you might have played with when you were a kid. Some animals, like birds, sea turtles, and fish, have special cells in their bodies that can sense which direction the magnetic field is pointing. They use this information to help them navigate and find their way around.

It's like having a built-in compass in your body that helps you find your way, even when you can't see any landmarks. Pretty cool, right?

Animals That Use Magnetoreception:

- ☑ Birds use magnetoreception to navigate during migration, allowing them to fly in the correct direction even when they can't see the sun or stars. They also use it to find food and suitable breeding grounds.
- ☑ Sea turtles use magnetoreception to navigate the ocean and find their way back to the beach where they were born.

- ☑ Fish use magnetoreception to navigate rivers and streams, and to find their way back to their home waters.
- ☑ Migratory insects, such as butterflies and beetles, use magnetoreception to navigate over long distances.

- ☑ Some mammals, like bats, use magnetoreception in combination with echolocation to navigate their environment.

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LS.5

True or False

Is the statement true or false?

1) Humans have magnetoreception	True	False
2) An animal with magnetoreception has a compass inside them	True	False
3) Magnetoreception is when animals use the magnetic field for directions	True	False
4) All animals use magnetoreception	True	False
5) Fish use magnetoreception to find their way back home	True	False

Visualize

ou were picturing while you were reading. Explain the picture

Questions

Answer the questions below using from the text

1) What is magnetoreception?

2) How do animals use magnetoreception?

Name: _____ 131

Curriculum Connection
CS.1

Writing Code Activity – Animals Responding

Objective What are we learning more about?

Understand how animals respond to different situations (danger, food, or temperature) and represent these responses using offline coding.

Materials What do we need?

- ✓ [illegible] or poster board
- ✓ [illegible]ful mar[illegible]ns
- ✓ Small ani[illegible]or [illegible]kers (optional)
- ✓ Small co[illegible]s [illegible]od, pr[illegible]and temperature symbols (can be drawn on paper and c[illegible]

Method How do we co[illegible]the [illegible]?

1) Introduction to Coding: Explain to [illegible]dents th[illegible]ding [illegible]way of giving instructions to a computer. When we code[illegible]e ste[illegible]commands. For this activity, we'll be doing 'offline coding', [illegible]doe[illegible]omputer.

2) Identify the Variables: Explain that animals respo[illegible]er, f[illegible]d temperature in different ways. Use a different colour [illegible]r o[illegible]h condition - a lion for danger, an apple for food, and a sun or s[illegible] temperature.

3) Create a Coding Legend: Decide on simple 'code' commands for the animal movements. For example, an arrow pointing up could mean 'move forward', an arrow pointing right could mean 'turn right', and so on. Draw these commands in a 'Legend' on the side of the paper.

4) Set the Scene: Place or draw the animal at one side of the grid. Randomly place the danger, food, and temperature symbols on different squares of the grid.

5) Coding the Animal's Path: The aim is to 'code' a path for the animal to react to the symbols and reach the other side of the grid. For example, when the animal encounters a 'food' symbol, it might 'move forward' to eat. When it encounters a 'danger' symbol, it could 'turn right' to escape.

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CS.1

Method — How do we complete the experiment?

6) Writing the Code: In a column next to the grid, write down the 'code' for the animal's path, using the commands from your legend. Each time the animal moves or turns, a new command is written down.

7) Test the Code: Once the 'code' is complete, follow the instructions from the beginning, moving the animal according to the coded commands. Did the animal react appropriately to the danger, food, and temperature symbols?

Plan — will complete the coding activity

1) What anim… use… our activity?

2) What variables will you use in yo… ity? E… es include a lion for danger, an apple for food, and a sun… snowfl… or t… rature.

3) How will you code your way through the grid? Write or draw the… nds you will use. Examples include an arrow pointing up could mean "… forward" and an arrow pointing right could mean "turn right".

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Curriculum Connection
CS.1

Coding Grid Draw the variables and animals on the grid below. Then write the code

Code

Legend	

Name: _____ Date: _____

Units Test – Living Systems

Multiple Choice /10

1) Vertebrate animals have... a) No backbone b) A backbone c) 2 legs d) More th gs	2) Birds... a) Have fur b) Lay eggs c) Are cold-blooded d) None of the above
3) Animal on 2 legs are... a) Qu b) Biped c) Unipedal d) Tripedal	4) A frog is part of which animal group? a) Amphibian b) Insect c) Reptile d) Mammal
5) Which animal uses echol a) Bears b) Lions c) Dolphins d) Rats	hen plants grow thick roots, they are ding to... Tou b) Li d) Gra
7) A plant responds to heat by doing what? a) Phototropism b) Transpiration c) Photosynthesis d) Gravitropism	8) When a s ws it is called... a) Reproduction b) Perennials c) Spreading Seeds d) Germination
9) A group of organisms that have similar characteristics is called a... a) Species b) Organism c) Population d) Community	10) An individual living thing is called a... a) Species b) Organism c) Population d) Community

Definitions

What does each term mean? (1 mark each)

Term	Definition (what does it mean)
Organism	
Vertebrate	
Dorm… Plant	

Short Answer

Ans… …uesti… … – Each question is worth 2 marks

1) List 3 similarities/differences betwe… …amma… …reptile.

2) What organisms live in the desert? How can they survive there?

3) What body parts do carnivore animals have? How do they help them survive?

Long Answer | Answer the questions below – Each question is worth 5 marks

1) How do plants respond to light and water? Give examples and explain why they respond that way.

2) Do all animals have the same sensory organs? How do animals perceive the world differently? Give examples of animals with different senses