WISE Activity Booklets

A STEM activity booklet for fun on-the-go learning!

Made by WISE Kid-Netic Energy

DIY Activities
Puzzles
Challenges
... and more!

Grade K-1
VOLUME 5 2020

Trees - Colours - Paper
Living Things - The Senses - Materials Science
Daily and Seasonal Changes

University of Manitoba

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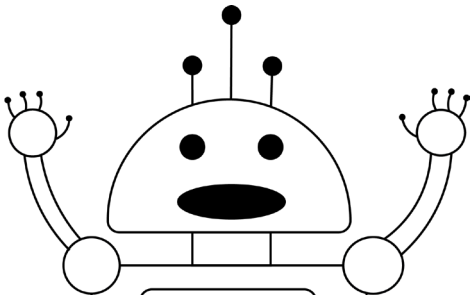


Hello there!

WISE Kid-Netic Energy is a not for profit STEM (Science, Technology, Engineering, and Math) outreach organization at the University of Manitoba. Our organization offers science and engineering workshops, clubs, camps and events to youth from Kindergarten to Grade 12 throughout the province of Manitoba. We reach on average 25 000 to 50 000 youth depending on funding levels. Our approach is simple – present STEM in messy, memorable and engaging ways so Manitoba youth feel motivated to learn more and more. We reach all Manitoba youth, and we particularly target underrepresented youth like girls, indigenous youth and youth facing socio-economic challenges.

All of us at WISE Kid-Netic Energy have been working hard to create these booklets to continue to bring our fun and educational STEM activities to Manitoba youth during these unprecedented times. We are disappointed that we cannot see you in person, and hope that these monthly booklets bring some STEM excitement to your life.

These booklets have been created by our student instructors who are all studying engineering, science, or in another STEM-related field at university. Peek the next page of this booklet to see who created the activities, experiments and recipes within.

All the activities in this booklet are based on the Manitoba Science curriculum. For any teachers viewing this booklet, all the SLO codes are listed at the bottom of each page.

We hope that you enjoy doing the experiments and activities as much as we loved creating them for you.

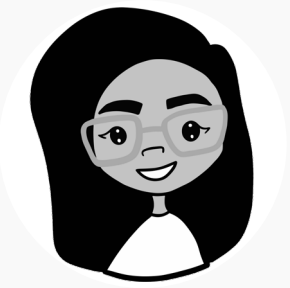
In this Grade K-1 booklet, the science topics you will be exploring are: trees, paper, living things, colours, our five senses, and more

Best of luck, and until we see you again,

the WISE Kid-Netic Energy Crew

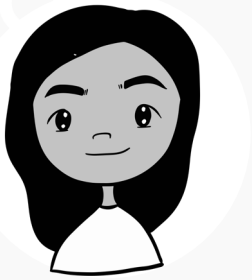
P.S. If you have any suggestions for activities or experiments you would like us to try, contact us through our website, or social media accounts that are listed on the last page of this booklet.

Meet our Amazing Authors!



Alora

Alora is in her sixth year of studying Neuroscience and French at the University of Winnipeg. Next year she's hoping to continue her education in order to become a high school science teacher and eventually, a guidance counsellor! In her spare time she enjoys spending time with friends, being outside, and reading.

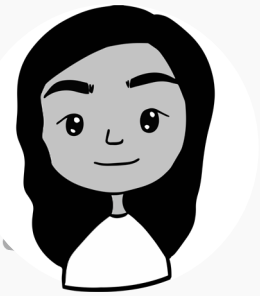


Gagan

Gagan is a fourth-year BSc Honours Student in the Department of Psychology. She enjoys being creative and loves to learn! In her free time, she likes to try new things, read, and grow plants.

Habiba

Habiba is a second year computer engineering student. In her free time, Habiba loves to learn about everything computer and internet related, but in her free time she likes to draw, go outside as well as cook.



Kajal

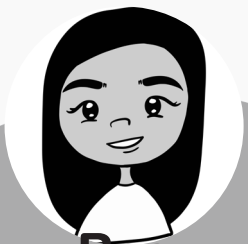
Kajal is in her second year of computer science. She likes to read and make new things! Her favourite fruit is mango.

Esiw the Robot

Esiw is a friendly robot that loves to help kids learn about computers & coding! Esiw loves to do math, solve problems and make people laugh!

... and our Incredible Editors!

Alex



Bea

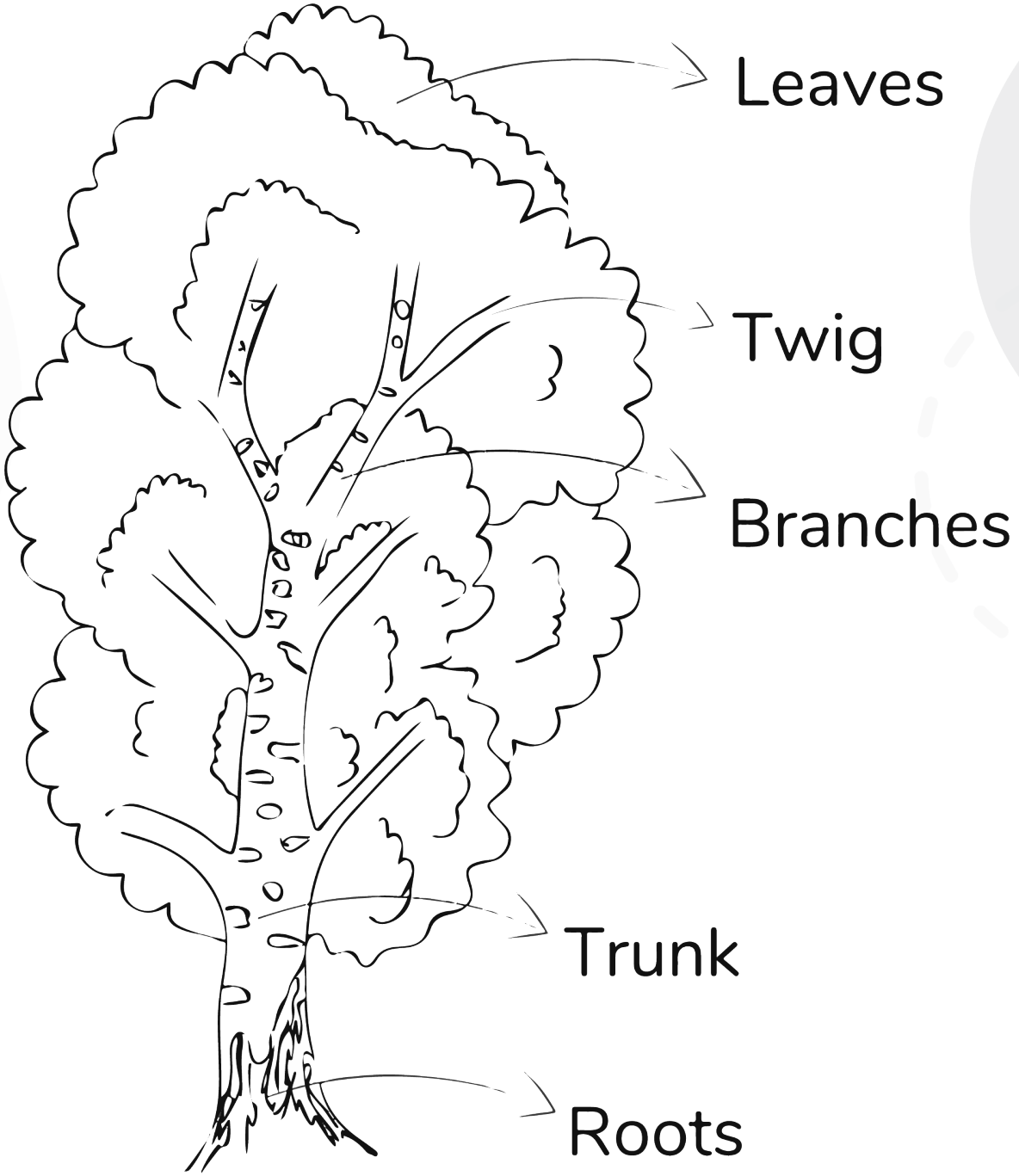
Mahalia

Michelle

The Tree and the Data Tree

The picture below shows a structure of a tree that can be found outside in nature.

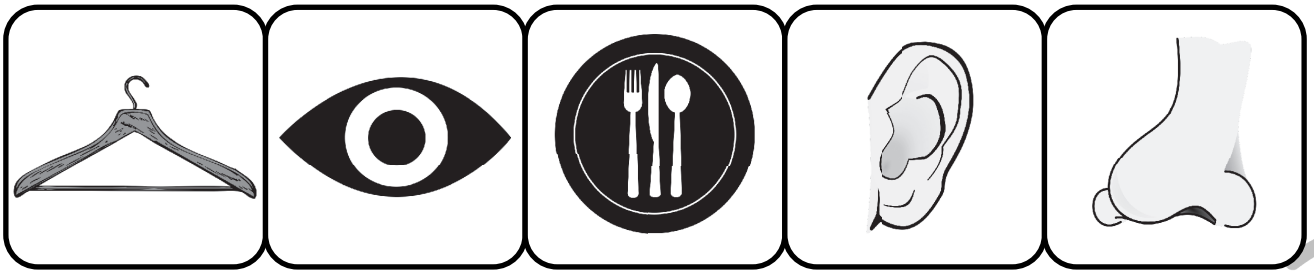
Colour this tree with different colours for each part.



SLO : K-1-01, K-1-03, K-2-07

What Season Is it?

This is a data set! A number of pictures that can tell you something.



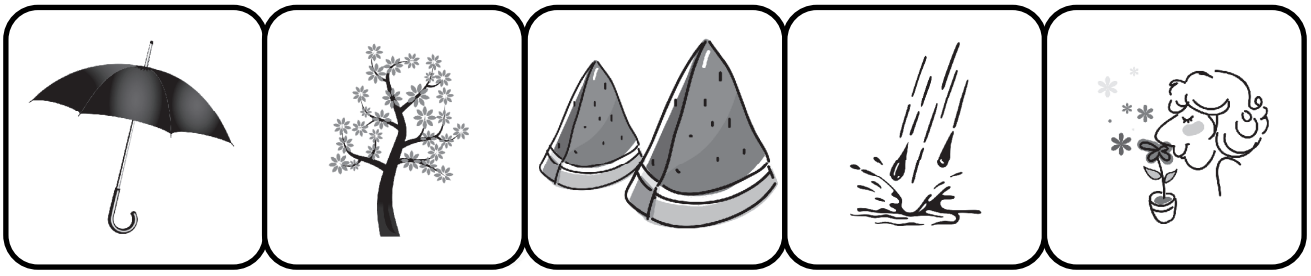
Can you use the data sets below to figure out what season it is? Use the word bank below!

Word Bank

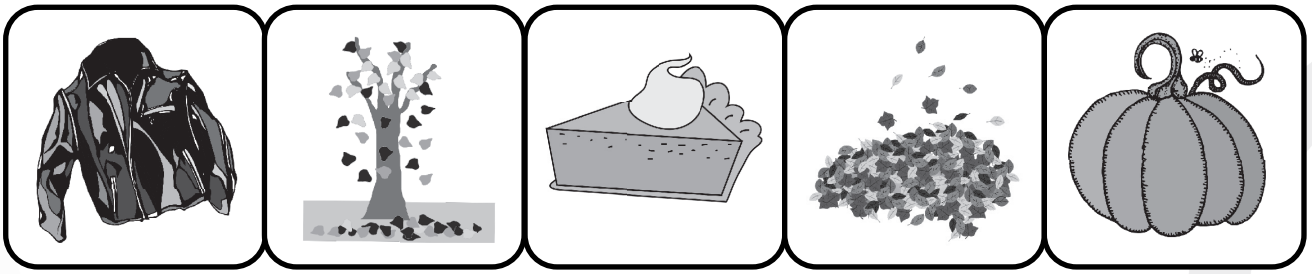
- Winter
- Spring
- Summer
- Fall

Season: _____

Season: _____



Season: _____



Season: _____

Fun with Colours! Remix

Find some paint around your house for this next activity. We're going to be mixing colours together! (**Don't forget to ask an adult for help! Paint can be a little messy.**) If you don't have any paint at home, you can use pencil crayons, wax crayons, or markers!

Find something **PURPLE** around you! Try mixing **RED** and **BLUE** in the circles below to match your purple object. If it's not dark enough, try to add a little bit of **BLACK**. If it's not light enough, try to add some **WHITE**.

What purple object did you pick? _____

Mix paint **here** ...

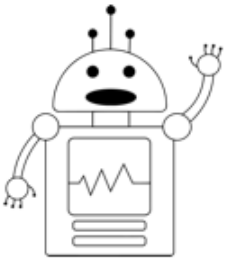
Here ...

And **here**!

SLO : K-2-03, K-2-06

This activity continues on the next page!

Show ESIW what colours these mixes make!



Write the names of the colours too!

Red + Yellow = Orange

Red here + **Yellow** here = **MIX** red and yellow here!

Red + Blue = Purple

Red here! + **Blue** here! = **MIX** red and blue here!

Blue + Yellow = Green

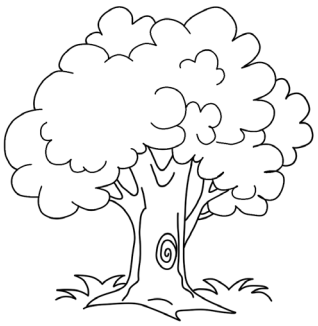
Blue here! + **Yellow** here! = **MIX** blue and yellow here!

Falling Leaves

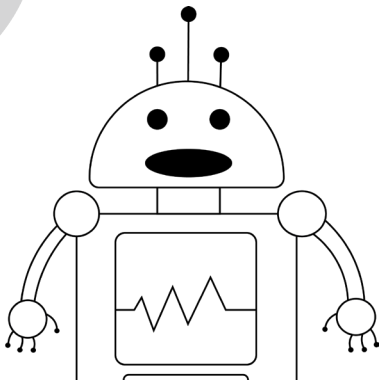
Lots of trees have leaves that turn red, yellow, or orange in the fall! But some trees stay green all year round. Why does that happen?
There are two types of trees! The ones that have colour changing leaves are **Broadleaf** trees and the ones that stay green are called **Evergreen** trees.

Evergreen trees usually have needles or scaly leaves and have pinecones on their branches.

Broadleaf trees have wide leaves that are flat and fall off in the autumn after they change colour. They grow flowers and fruit!



Esiw the robot needs your help! Can you sort the leaves of different trees found in Manitoba into Evergreen and Broadleaf categories? And in order for Esiw to understand, we're going to put it into **binary** code.



Did you know? Binary is a language that computers can understand made of 0s and 1s! In this case, **Evergreen = 0** and **Broadleaf = 1**.

SLO : K-1-06

This activity continues on the next page!

Cut out the different Manitoba leaves on Page 11 and place them in the right category below! Remember **Evergreen = 0** and **Broadleaf = 1**.

0	1

This activity continues on the next page!

MANITOBA MAPLE

WHITE SPRUCE

RED PINE

TAMARACK

BLACK ASH

PEACHLEAF WILLOW

COTTONWOOD

GREEN ASH

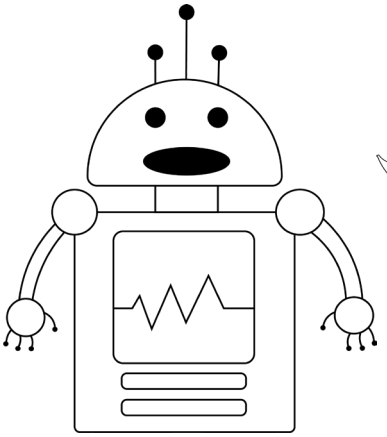
BUR OAK

BASSWOOD

This page is intentionally left blank, because the previous page is meant to be cut up.

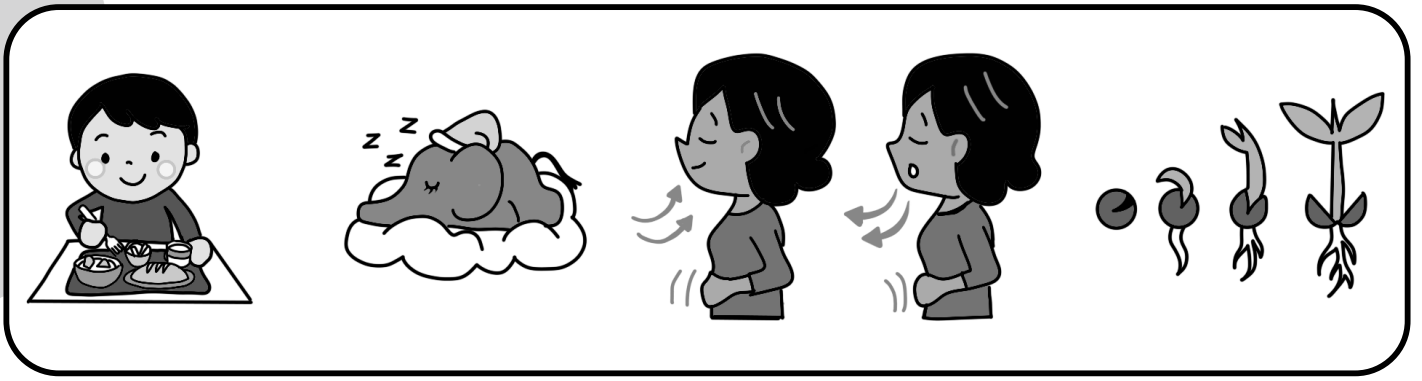
Is It Alive? - Scavenger Hunt

What's the difference between something that's alive and something that is non-living? **Humans** are living, so are **plants**, and **animals**! All of these things need to...

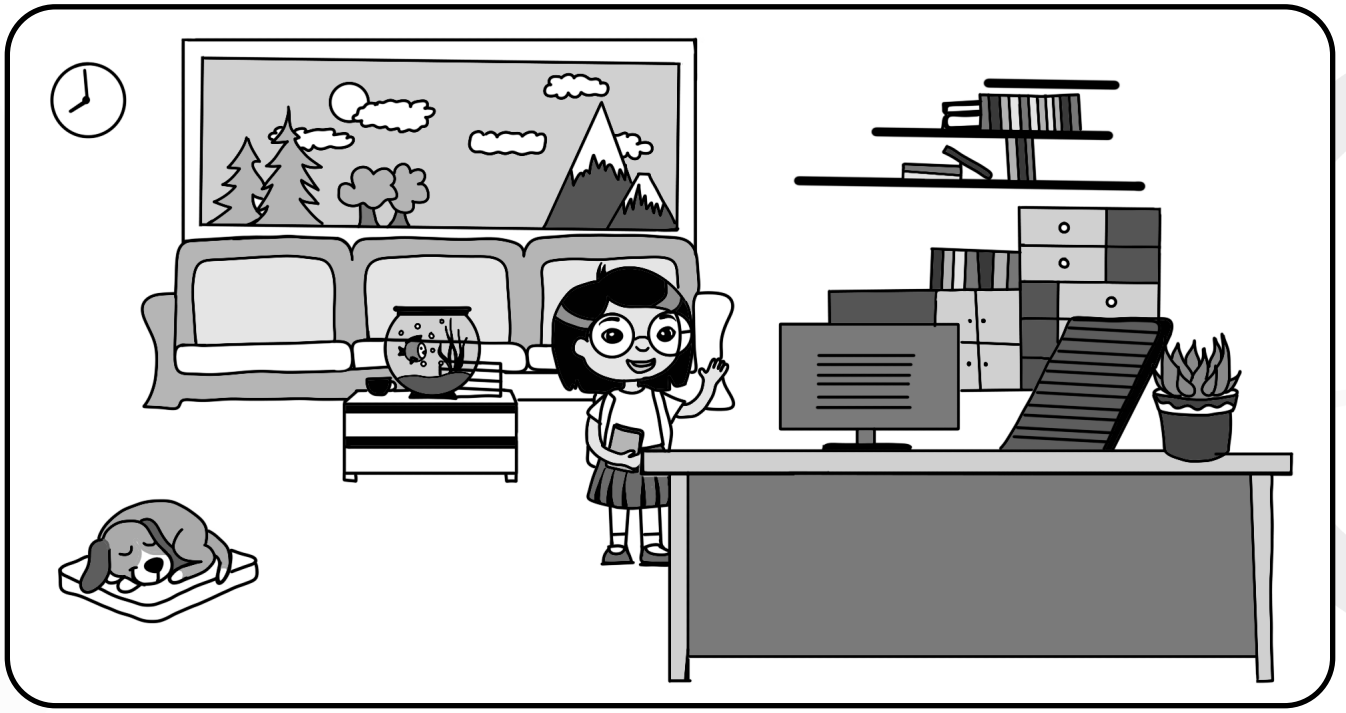


Can you show me how to trace the letters below?

Eat Sleep Breathe Grow



Can you show Esiw the <u>living</u> things in this picture by drawing a **GREEN** line from the object to the name? Use a **PURPLE** line to connect the <u>non-living</u> objects to their name!



clock

fish

tree

desk

sofa

student

house plant

dog

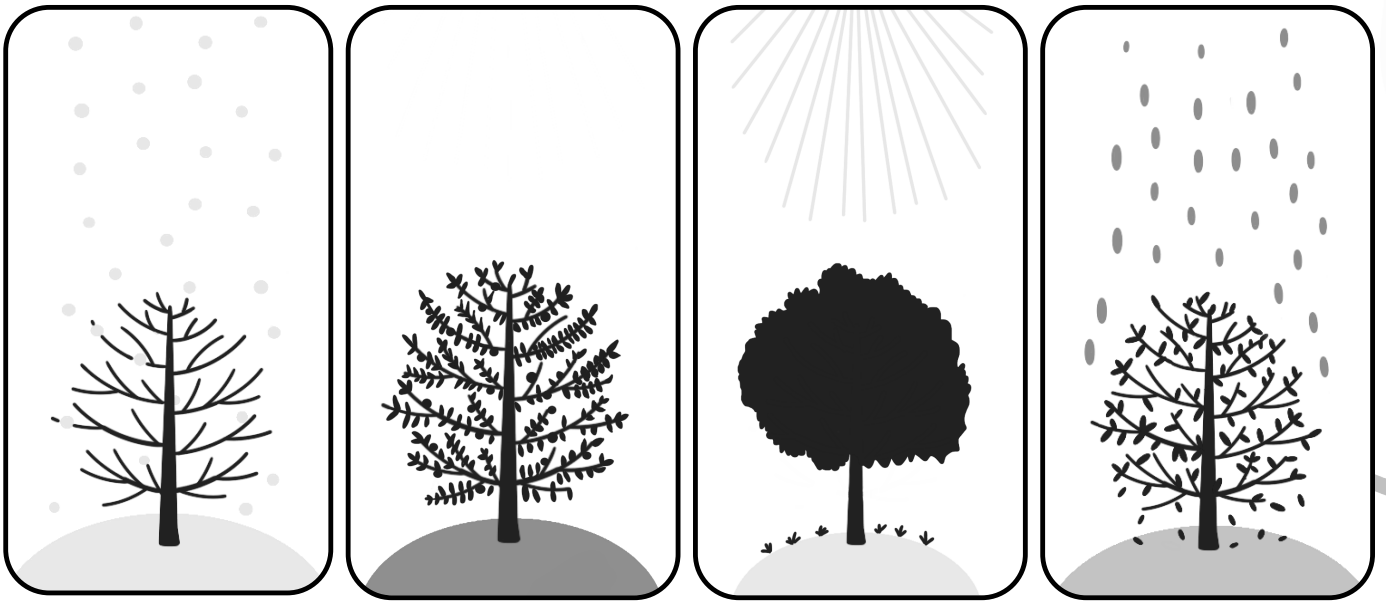
mountain

book

Seasons

Using lines, match the boxes with the correct seasons!

Winter | Spring | Summer | Fall



Snow | Hot | Cold | Leaves turn orange, red, and yellow

Begins in March | Rainy | Begins in September

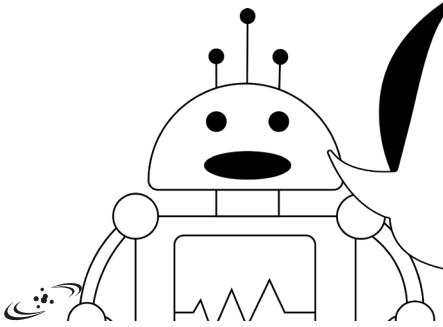
Begins in December | Animals go into hibernation | Shorter days

Begins in June | Longer days | Flowers in bloom

The Texture Scavenger Hunt

Find an object in your environment that has the following textures like the examples below, and draw it in the right box below!

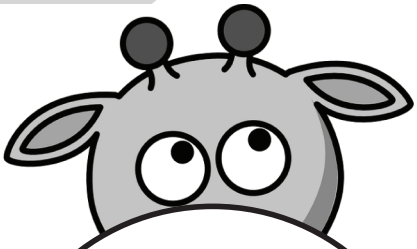
	Smooth	Bumpy
Soft	**Soft and Smooth** Example: a T-Shirt 	**Soft and Bumpy** Example: a Teddy Bear 
Hard	**Hard and Smooth** Example: a Flat Plate 	**Hard and Bumpy** Example: a Golf Ball 



Computer scientists collect information and observations to help them solve problems. This information is called **Data**. There's two types of data, one that focuses on numbers and **quantity** (example: There's 3 apples.) and one that focuses on describing **quality** (example: The pillow is smooth and soft).

Constants and Variable

A **VARIABLE** is a piece of information that can change. Like your height!



A **CONSTANT** is a piece of information that can't be changed. Like the number of eyes you and a giraffe have.

Draw a circle around the characteristics that are **VARIABLES** for the elephant and dog. Draw a square around the characteristics that are **CONSTANTS**.

NUMBER OF EYES

SOUND THEY MAKE

HAS A TAIL

HEIGHT

TYPE OF NOSE

HAS FUR

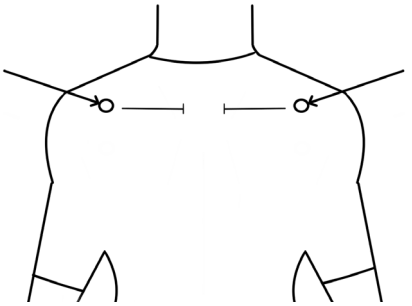
NUMBER OF LEGS

NUMBER OF EARS

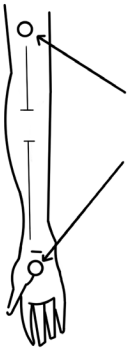
WHAT THEY EAT

Pinpointing Touch

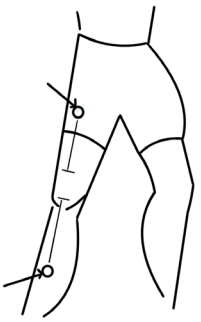
Find a partner (e.g., sibling, parent, or a friend) and with your eyes closed, get your partner to place two fingers on your back as shown below (for the first experiment). Keeping your eyes closed, your partner will gradually move their fingers closer together until you can only feel one finger. Record the distance between their two fingers. Do this again, but for your forearm and leg!



Distance Recorded



Distance Recorded



Distance Recorded

Answer Keys

What Season is it? (Pages 5-6)

Summer
Spring
Fall
Winter

Falling Leaves (Page 9-11)

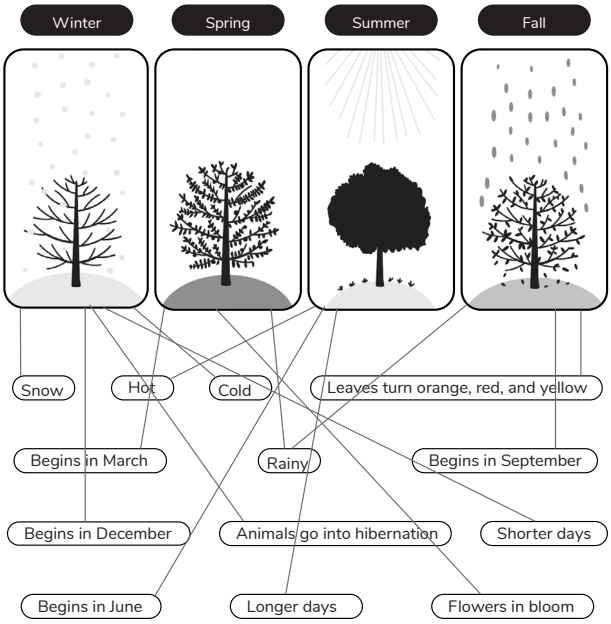
0 (Evergreen): Tamarack, Red Pine, White Spruce.

1 (Broadleaf): Black Ash, Brasswood, Bur Oak, Green Ash, Cottonwood, Manitoba Maple, Peachleaf Willow.

Is It Alive? (Page 14)

Living = fish, tree, student, house plant, dog.
Non-Living = mountain, book, desk, sofa.

Season (page 15)



Constants and Variables (Page 17)

Variables = Sound they make, height, type of nose, has fur, what they eat.

Constants = Number of eyes, number of legs, has a tail, number of ears.

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