

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!



University
of Manitoba

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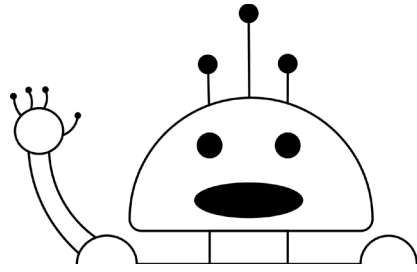
Youth · STEM · Innovation

With funding from

Canada

Grade K-1
JULY 2020

Trees - Paper - Living Things
Colours - Our 5 Senses - Material Science



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 last 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.

If a link is listed at the bottom of the page, and you have access to the Internet, follow it to check out a video of the activity our instructors have created just for you.

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!

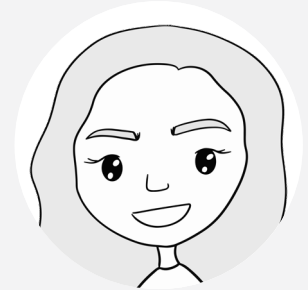
**Best of luck, and until we see you again,
the WISE Kid-Netic Energy Crew**

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!

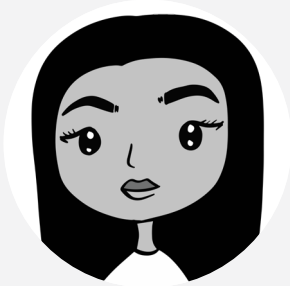
Amelia

Amelia just completed her first year of the two-year after-degree program in early years education. When she isn't reading, she loves writing lists, running, having quality conversations with friends, knitting and singing show-tunes. Amelia is very excited to be working with WISE Kid-Netic Energy this spring!



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.



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.



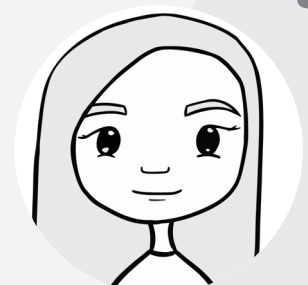
Olivia

Olivia is going into her third year of biosystems engineering. She hopes to work in renewable energy or water treatment in the future. In her free time, she plays and refs touch football and enjoys playing the piano.



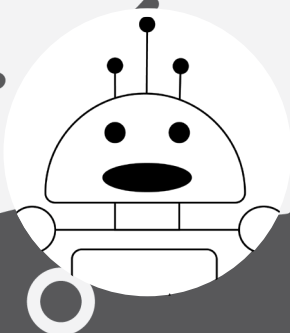
Sophia

Sophia is in her second year of science and is planning on going into optometry in the future. She loves math and biology, and in her free time loves swimming, reading and trying new foods!



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!



Parts of a Tree (Part 1)

Let's learn about the parts of a tree! The tree below has come apart. To put the tree back together, in order from top to bottom, write the number of the correct tree part name in the blanks under each image of a part.

1 = Crown

2 = Branches

3 = Trunk

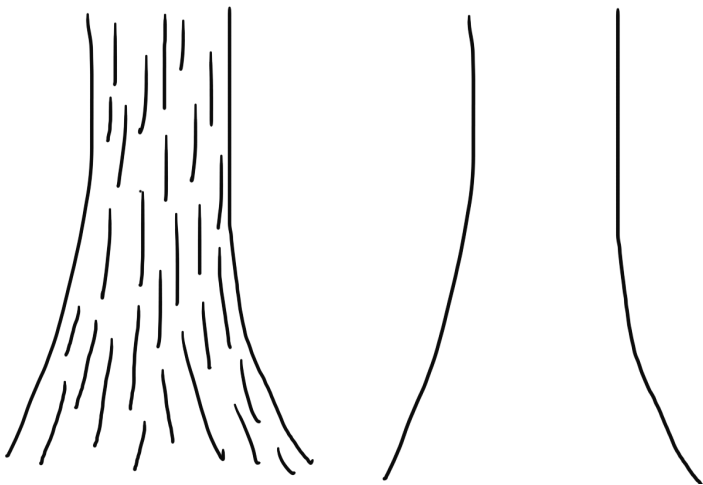
4 = Bark

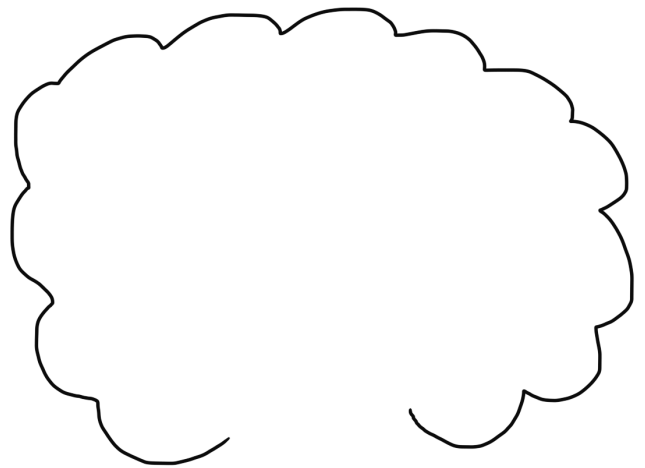
5 = Leaf

6 = Needle

7 = Seed

8 = Roots















Parts of a Tree (Part 2)

Yay, you put the tree back together! Now colour the parts of the completed tree below using the following rules:

1 = green

2 = brown

3 = brown

4 = brown

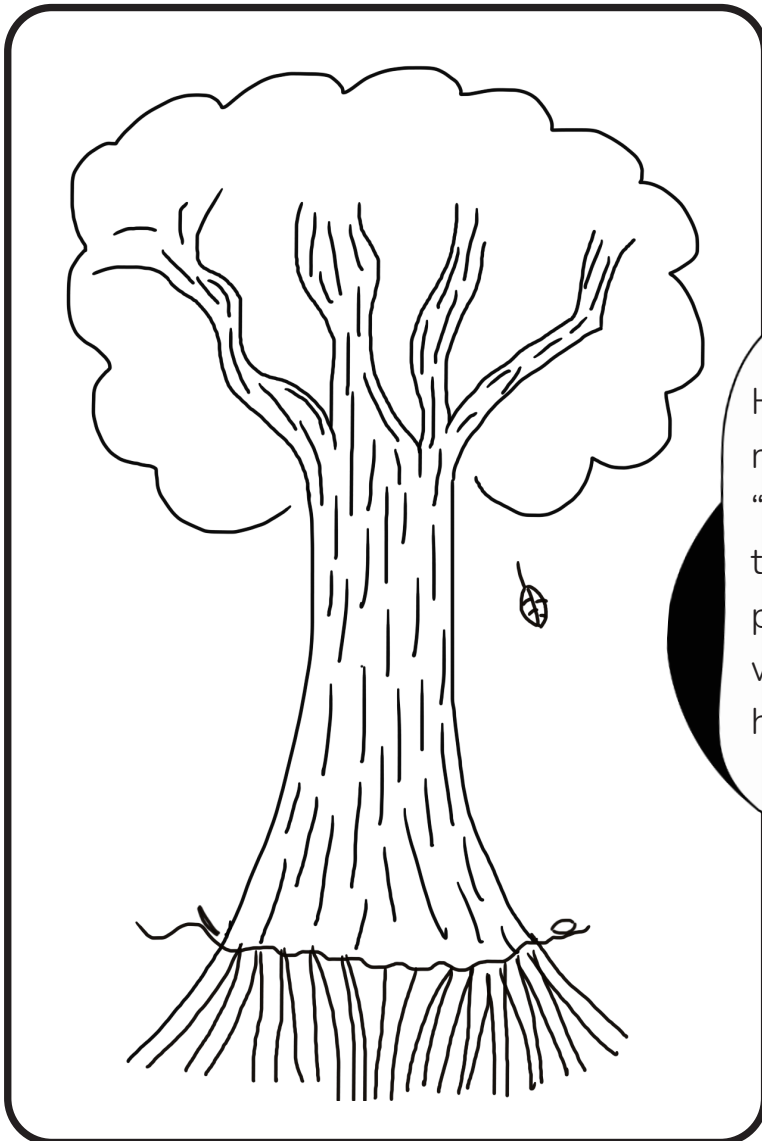
5 = green

6 = black

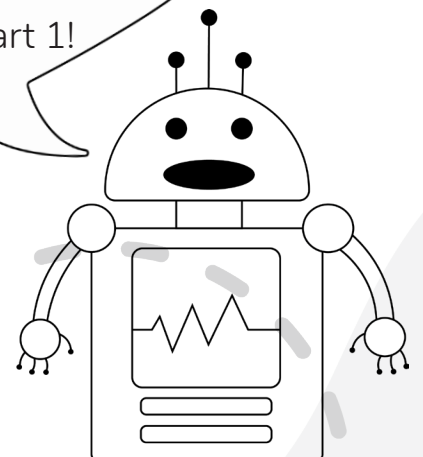
7 = yellow

8 = brown

Hint: Use the activity on the Page 1 to help you!



Hi! Esiw here! When machines like me follow “code”, it’s important that the code is ordered properly! Just like what you made sure happened in Part 1!



Leaf Rubbing Art (Part 1)

Ask a family member or friend to read the story about Jordan the Tree and their friend Squirrel below, and then complete the activity below and on the next page!

Once upon a time there was a tree named Jordan. Jordan was a very sad tree, because Jordan did not have any leaves. Jordan's best friend Squirrel decided to try to cheer Jordan up. Squirrel went on an adventure down the block to find some leaves to bring to Jordan.

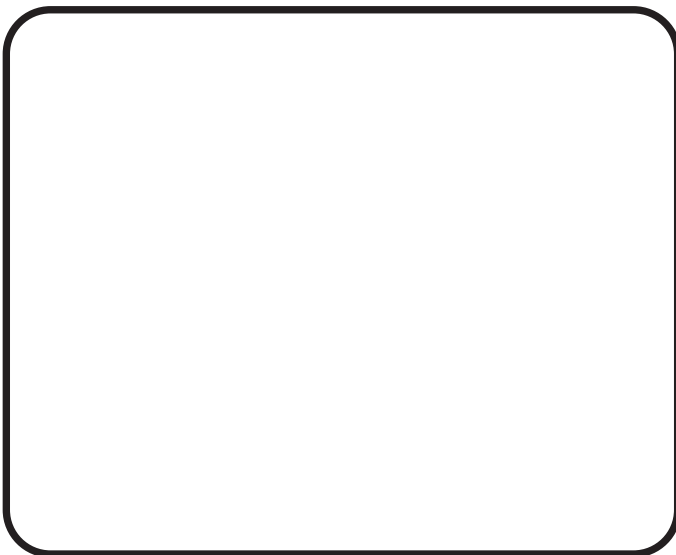
First, Squirrel looked on the ground. One of the other trees on the block had lost a few leaves in the wind and they were now lying on the ground. Squirrel picked up those leaves and continued on. Next, Squirrel approached a great Oak tree. Squirrel asked the great Oak tree if they would be willing to share some of its leaves with Jordan.

"Sure," said the great Oak, "Jordan is my friend too, so I can share some of my leaves."

The adventure continued until Squirrel had collected leaves from Ash, Aspen, Maple, Cottonwood, Pine and Elm trees! Squirrel brought all the leaves back to Jordan and placed each of the leaves to the ends of Jordan's bare branches.

When all the leaves were in place, Jordan looked wonderful! Jordan became the happiest tree on the block! Not only were Jordan's branches no longer bare, Jordan was also touched by how kind the other trees had been by sharing their leaves. Jordan became a symbol of the uniqueness of the community and was never sad again.

What do you think Jordan looked like at the beginning of the story? What do you think Jordan looked like at the end? Draw a picture of Jordan without any leaves in the first space below, then draw a picture in the second space of Jordan after all the other trees share their leaves with them.



Leaf Rubbing Art (Part 2)

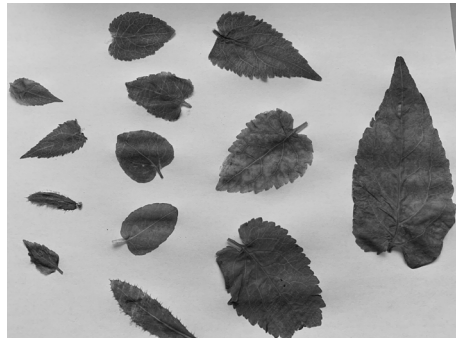
Collect some leaves from your community like the Squirrel in the story, and then follow the steps below to make some Leaf Rubbing Art!

Materials

- Leaves from your neighbourhood
- Pencil
- 2 Pieces of Paper
- Optional: pencil crayons or crayons

Instructions

- 1 Collect a variety of leaves; at least 15 leaves would be best!
- 2 Sort the leaves by size on 1 of the blank pieces of paper like so:



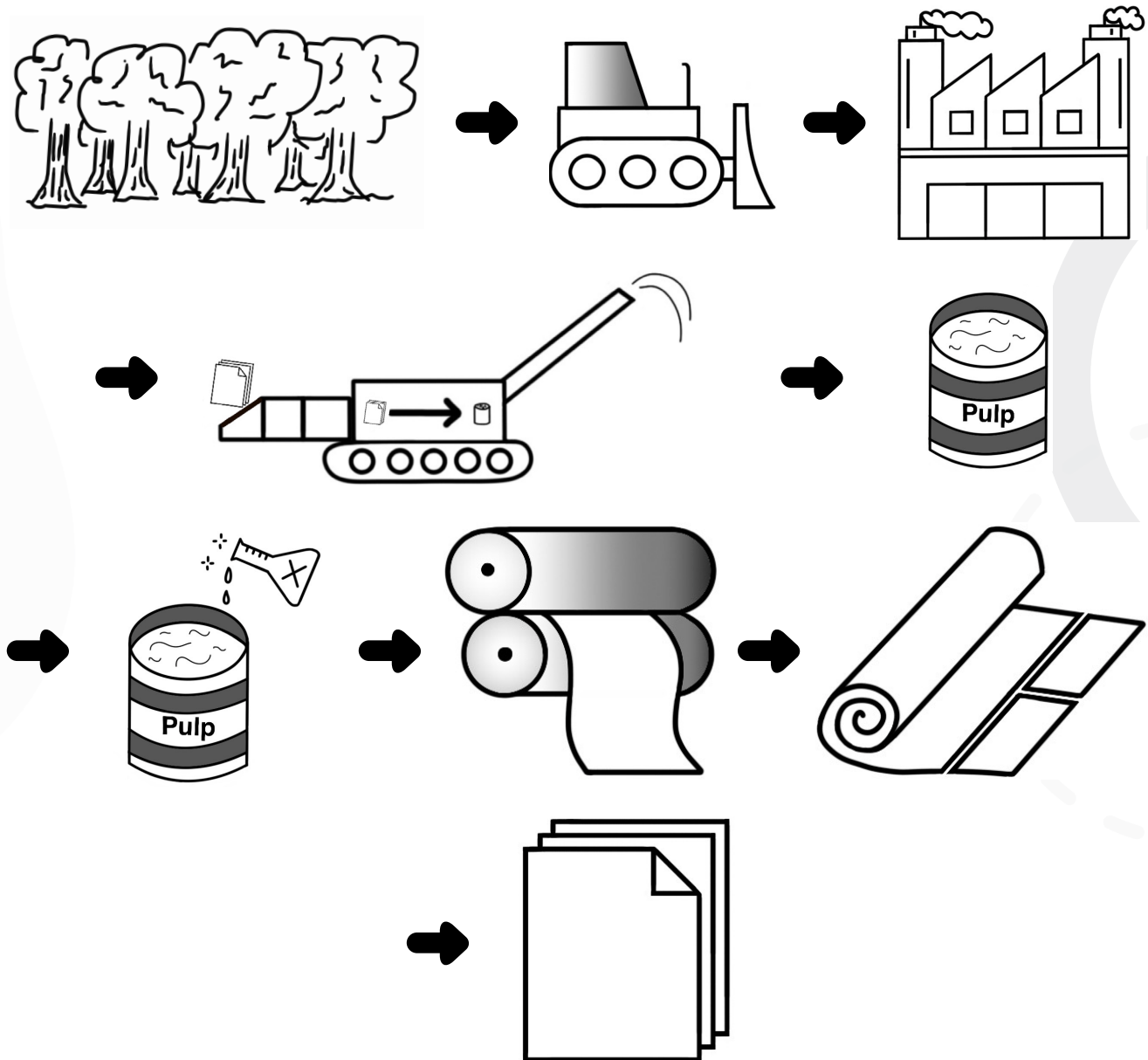
- 3 Spread the sorted leaves on the piece of paper and put another white paper on top of the leaves.
- 4 Take a pencil and rub the side of the pencil over the whole paper until it looks like this:



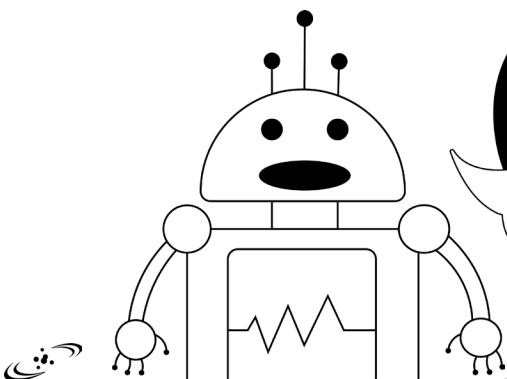
If the outline of the leaves does not appear on the paper right away, try rubbing a little harder with your pencil!

How to Make Paper: Trees to Paper!

Did you know that the paper in your hand used to be a tree? The pictures and arrows below show the steps for making paper!

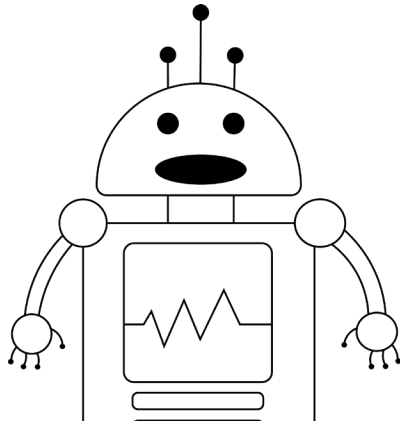


The steps to make paper are like an **algorithm** for making paper. An **algorithm** for a machine like me is a set of instructions I have to follow.

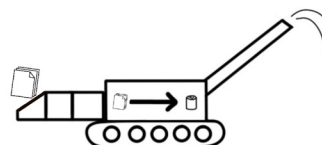
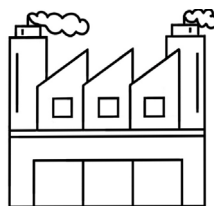
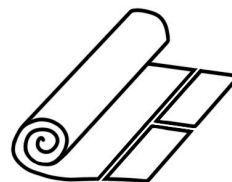
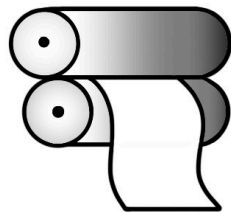


How to Make Paper: Recycled Paper to Paper! (Part 1)

When paper is recycled, the steps form a cycle! Cut the icons out below and glue them into the matching circles that do not already have an image in the cycle on page 11 to complete the **algorithm** for recycled paper.

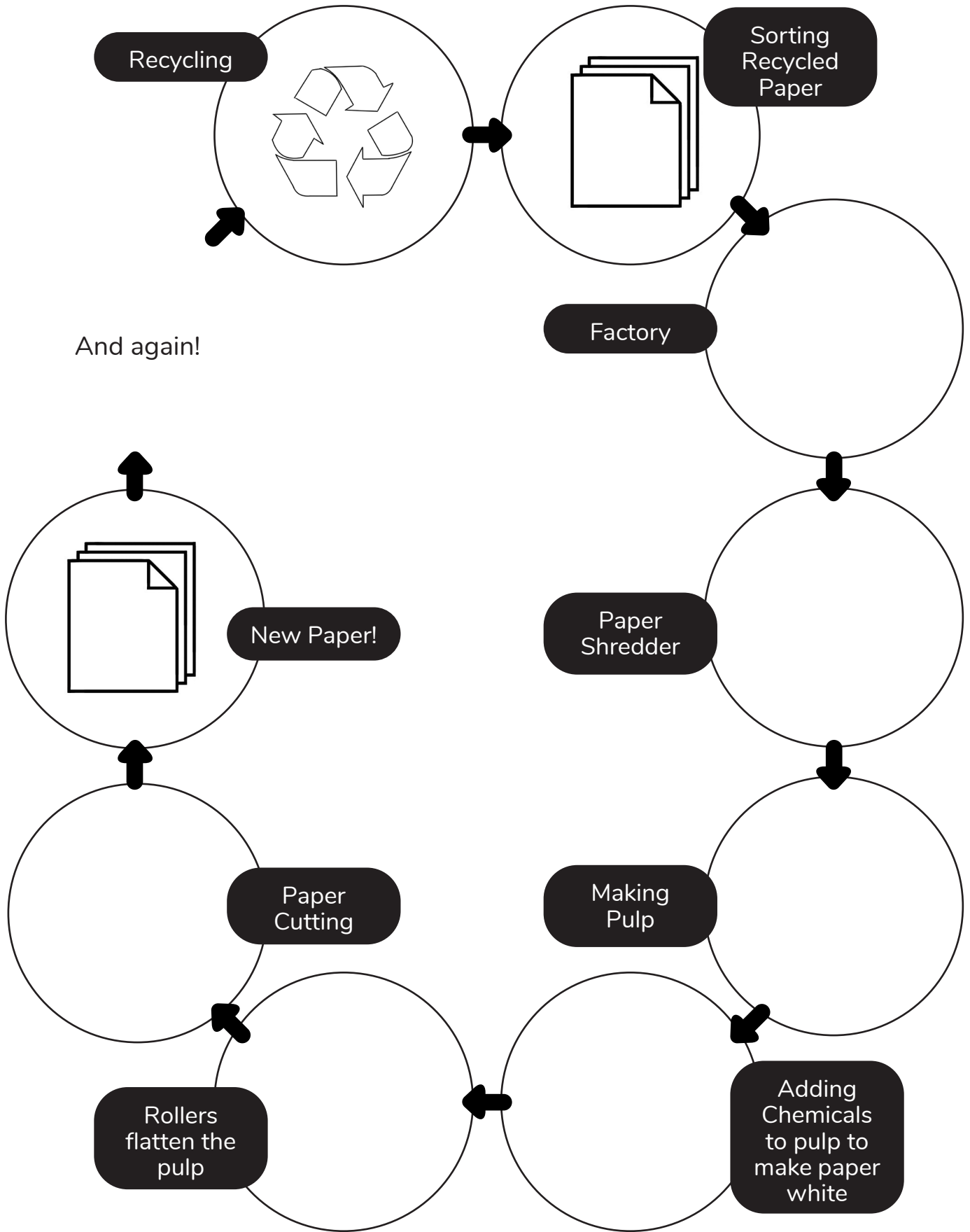


An **algorithm** that has to be repeated over and over again, like the paper cycle, is called a **loop** in coding!



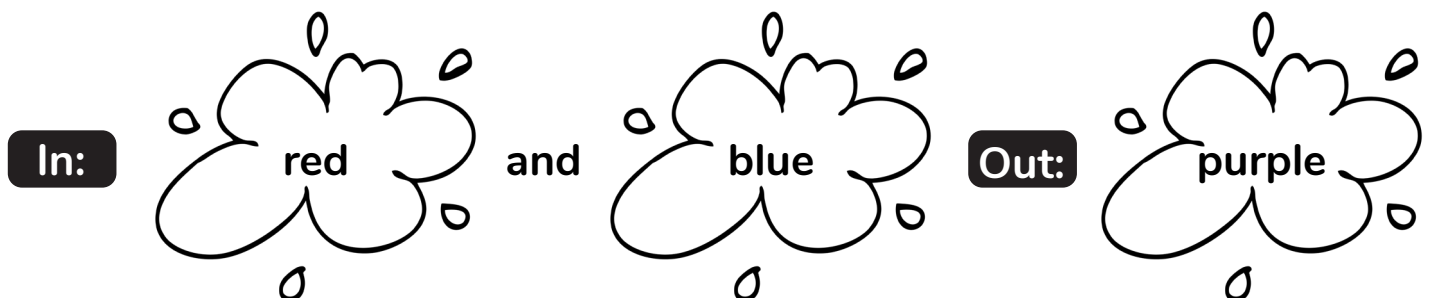
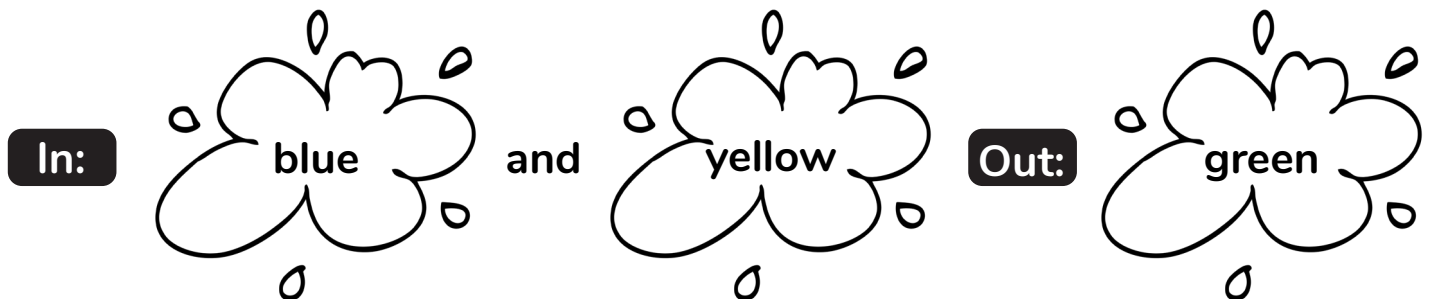
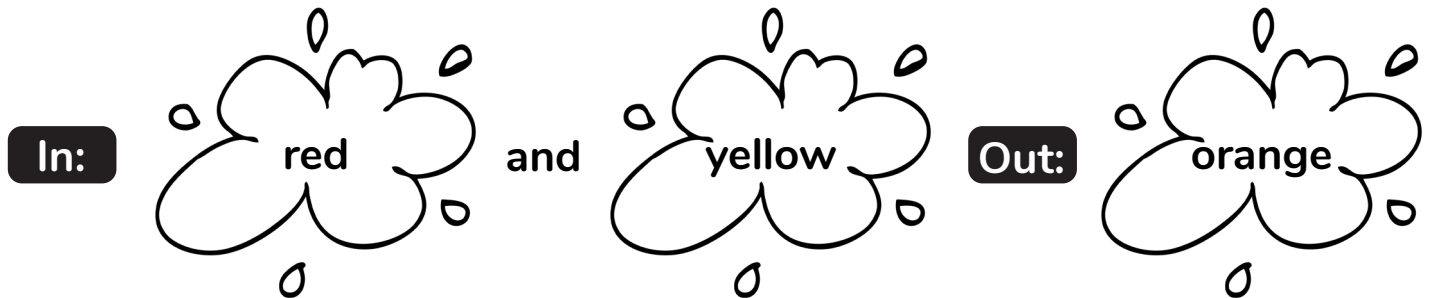
This page is intentionally left blank, because the previous page is meant to be cut up.

How to Make Paper: Recycled Paper to Paper! (Part 2)



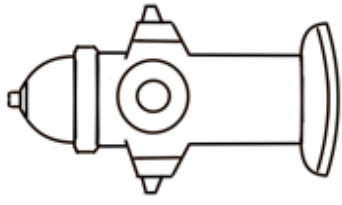
Primary Colour Mixer!

Colour in the primary colours and the resulting secondary colours from mixing them.

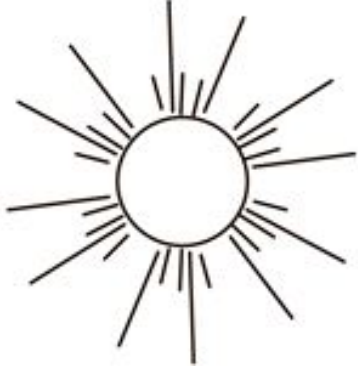
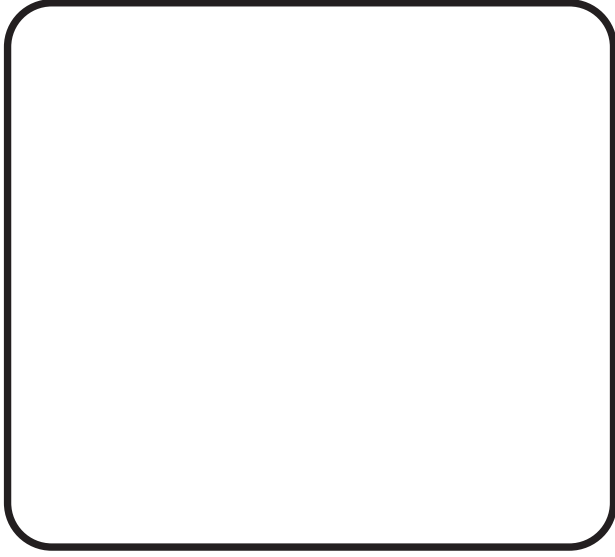


Colour Hunt!

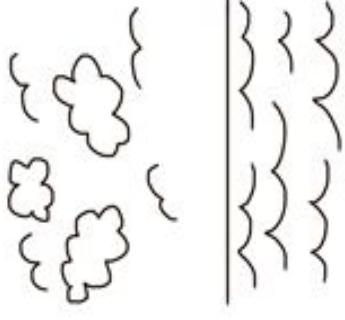
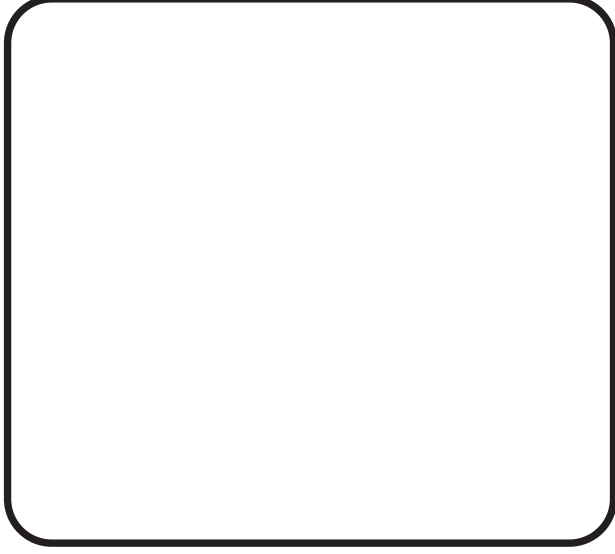
Colour the image with the colour listed and then find something else in your house or community that is also that colour. Draw the object in the box under the right colour!



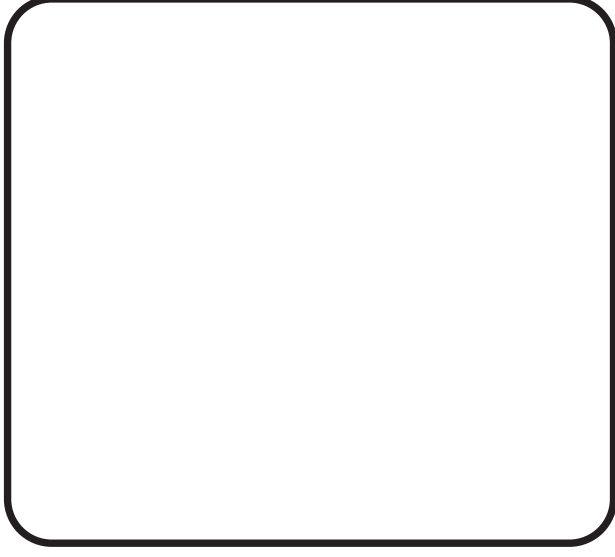
red



yellow



blue

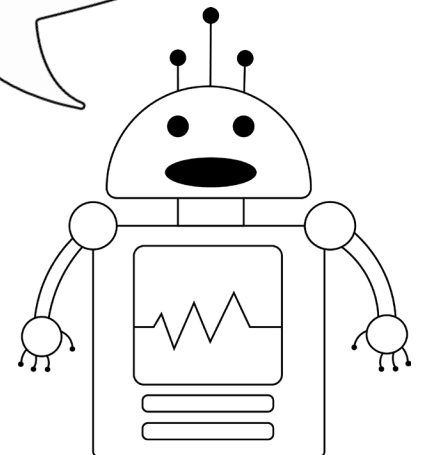


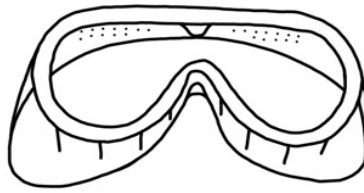
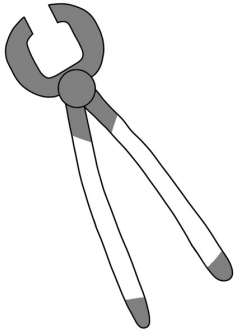
Science Safety!

Help Scientist Serenity get ready for her science experiment. She needs to make sure she protects her senses to stay safe. What senses do the items on the next page protect? Cut them out and paste them on Sally to help protect her!



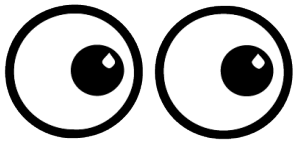
Serenity's senses need to be debugged! Her body is not protected against viruses, like an unprotected computer. Help save her senses by coding a protected body!





Count 5 Grounding Activity!

Do you ever feel scared? If you do, following the steps below may help you relax and calm down. You may want to ask a family member or friend to do this activity with you..



Find **5 things you can see!**
What do they look like?



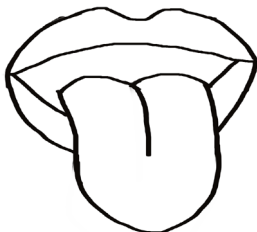
Find **4 things you can touch!**
How do they feel?



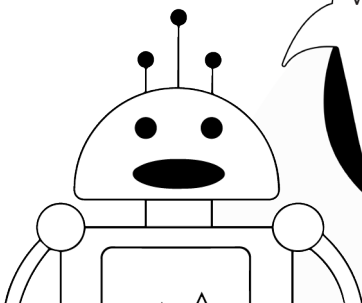
Find **3 things you can hear!**
What sound are they making?



Find **2 things you can smell!**
What sound are they making?



What's **1 thing you can taste?**



What a great example of a **decomposition**. In coding, **decomposition** is when you take a big problem and break it down into simpler steps. In this case, we take our surroundings and break it down using our 5 senses!

Working with Living Things

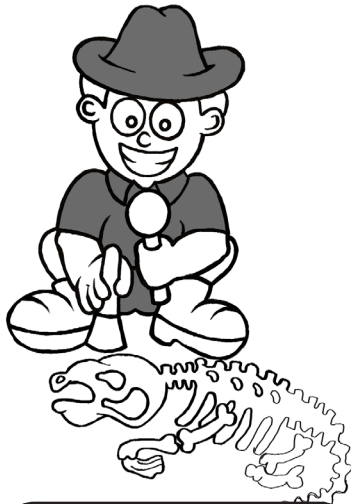
Which of these jobs have to do with living things? Living things include plants, humans and animals. When you're done, you can colour the pictures!



Marine Biologist



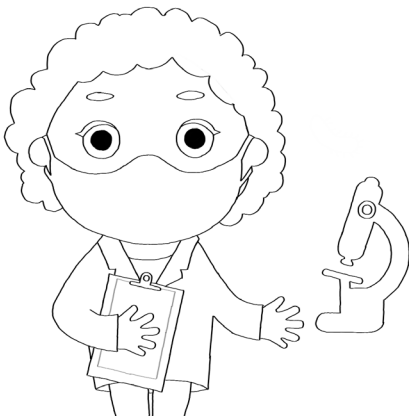
Veteranarian



Archaeologist



Gardener



Virologist



Arborist

Properties of Materials

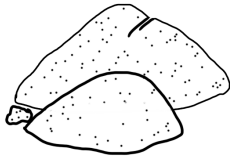
Match the properties of each object with the words that best describe each material, by circling the right words! Remember, each object may have more than 1 answer.

Hint: it may help to find each object in your home first!



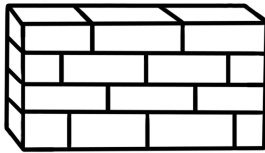
Wood

Shiny Dull Rough Hard Soft Brittle Wet Dry



Sand

Shiny Dull Rough Hard Soft Brittle Wet Dry



Brick

Shiny Dull Rough Hard Soft Brittle Wet Dry



Coin

Shiny Dull Rough Hard Soft Brittle Wet Dry



Water

Shiny Dull Rough Hard Soft Brittle Wet Dry

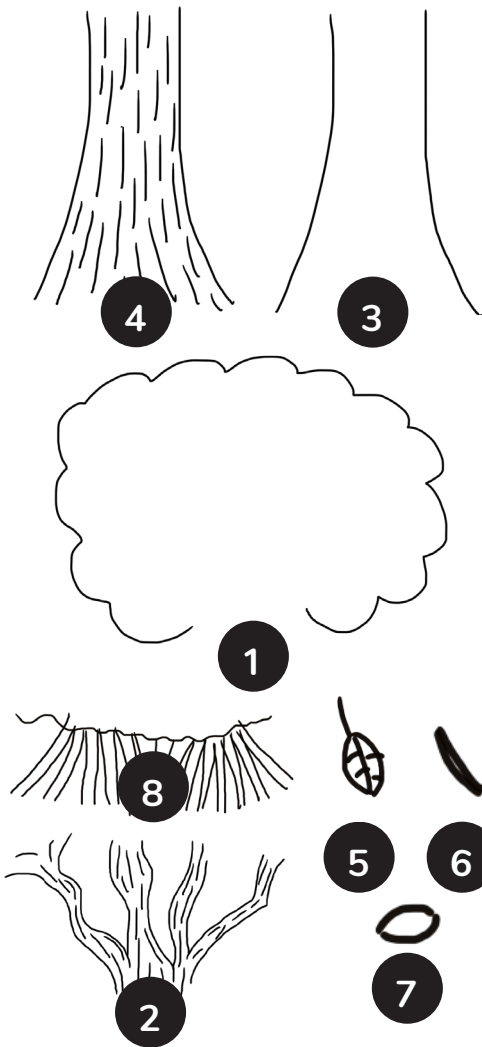


Gold

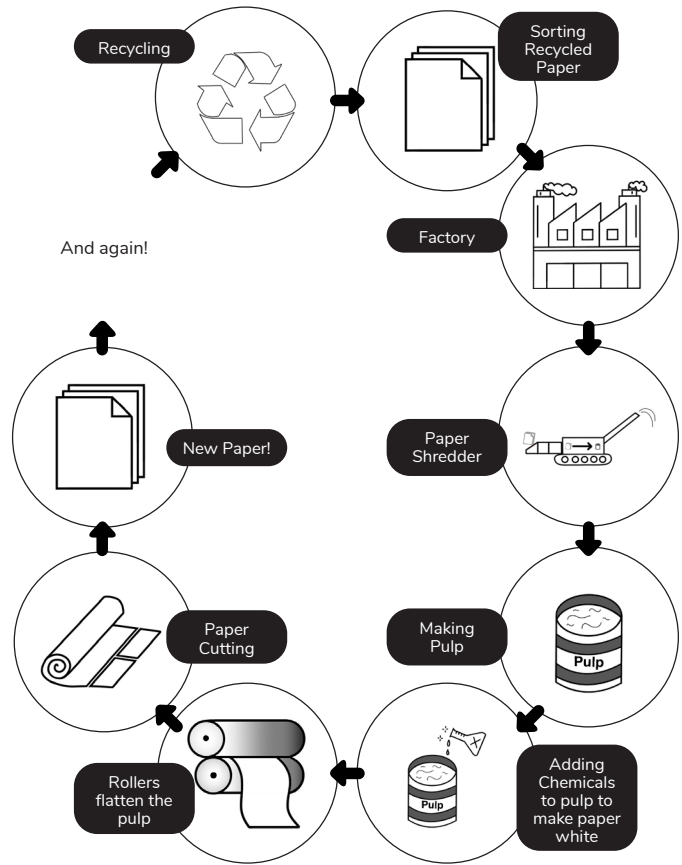
Shiny Dull Rough Hard Soft Brittle Wet Dry

Answer Keys

Parts of a Tree (Page 4)



How to Make Paper: Recycled Paper to Paper! (Part 2)



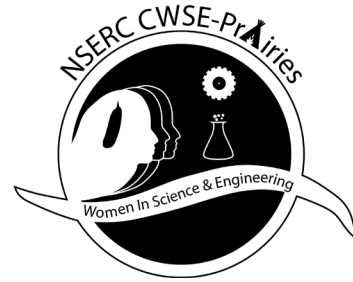
Working with Living Things (page 17)

Marine Biologist, Veteranarian,
Gardener, Arborist, Virologist

Properties of Materials (Page 18)

- Wood** Dull Rough Hard
- Sand** Dull Soft Brittle
- Brick** Rough Hard Dry
- Coin** Shiny Hard
- Water** Wet
- Gold** Shiny Hard

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