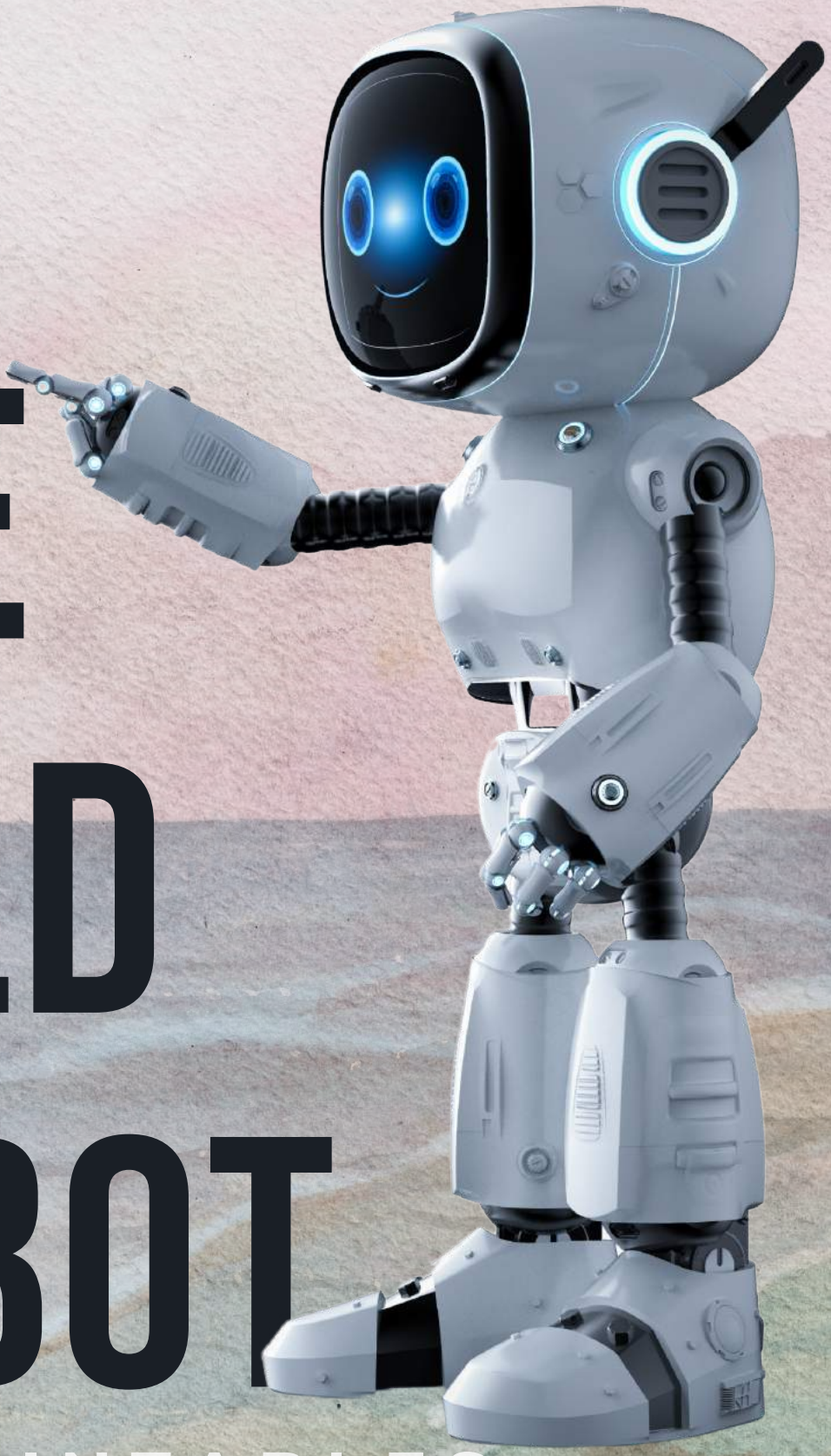
CREATURE CURRICULUM



THE WILD ROBOT

PRINTABLES

TABLE OF CONTENTS

The Engineering Design Process

ASK

The first step in the engineering design process is to ask questions about the problem. Ask the following questions:

- What problem is being solved?
- Who is this product being designed for?
- Why is a solution to this problem important?

IMAGINE

Next, imagine how these solutions will work. You can start by simply talking through the possible ideas and explaining how they would work. Many of the ideas will naturally be rejected during this step.

PLAN

In this step, it is time to refine and improve the solution and break down the path to solving the problem into smaller steps. When you later improve on a design, you will revisit this step each time you do.

BUILD

By this step, you have a design to build, and it's time to create a functioning version of your solution. Get to it!

TEST

Once a build/prototype is ready, it is time to test it. Here, use your creations to see if your design works/ solves the problem. Most likely, you will go through a few tests with a few different prototypes because there will be additional problems to solve that weren't thought of in the other design steps.

IMPROVE

Step seven is not so much a step as it is backtracking to the planning phase and determining what should be changed in your design, building a new prototype, and testing again.

REFLECT

Its time to reflect on what you have done. What worked? What didn't? and Why! As a final step, share your learning and design with others!

Name_____

BUILD A MODEL ROZ

Directions: Using a wide variety of materials, build a replicate of Roz.

1. ASK: How will you build your Roz?
2. IMAGINE: What materials could you use? Brainstorm a list of possible options.

3. PLAN: Choose the idea that you think is best. Draw a sketch in your Main Lesson Sketchbook of the Roz you intend to build. Label the parts of the robot with the materials you will use.

4 & 5. CREATE & TEST: Create your Roz. Does your Roz stand unassisted?

6. IMPROVE: What changes can you make? How can you improve Roz? Make any adjustments that are needed.

7. REFLECT: What was your biggest challenge while building Roz? What materials were the easiest to work with?

CAMOUFLAGE ROZ

Name_____

Directions: Using a wide variety of materials, camouflage your model Roz.

1. ASK: How will you camouflage your Roz?
2. IMAGINE: What materials could you use? Brainstorm a list of possible options.

3. PLAN: Choose the idea that you think is best. Draw a sketch of the Roz in your Main Lesson Sketchbook that you intend to camouflage. Label the parts of the robot with the materials you will use.

4 & 5. CREATE & TEST: Camouflage your Roz. Does your Roz blend into the background?

6. IMPROVE: What changes can you make? How can you improve camouflage? Make any adjustments that are needed.

7. REFLECT: What was your biggest challenge while camouflaging Roz? What materials were the easiest to work with?

ENGINEER A PROSTHETIC

Name_____

Directions: Using a wide variety of materials, engineer a prosthetic for Roz

1. ASK: How will you engineer this prosthetic?
2. IMAGINE: What materials could you use? Brainstorm a list of possible options.

3. PLAN: Choose the idea that you think is best. Draw a sketch of the prosthetic in your Main Lesson Sketchbook. Label the parts of the leg/foot with the materials you will use.

4 &5. CREATE & TEST: Build the prosthetic. Does your Roz stand?

6. IMPROVE: What changes can you make? How can you improve the build? Make any adjustments that are needed.

7. REFLECT: What was your biggest challenge while creating this prosthetic? What materials were the easiest to work with?

Name_____

BUILD A SHELTER

Directions: Using a wide variety of materials, build a shelter for your model Roz.

1. ASK: How will you build a shelter?
2. IMAGINE: What materials could you use? Brainstorm a list of possible options.

3. PLAN: Choose the idea that you think is best. Draw a sketch of the shelter in your Main Lesson Sketchbook. Label the parts of the shelter with the materials you will use.

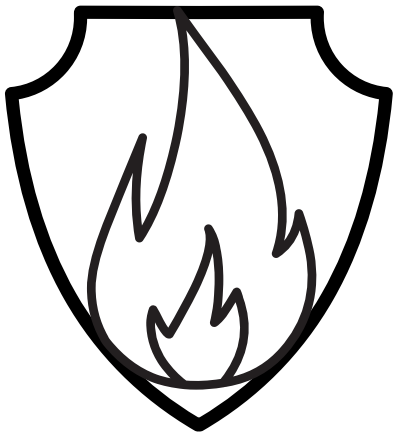
4 & 5. CREATE & TEST: Build the shelter. Does your Roz fit inside? Does the shelter withstand the elements?

6. IMPROVE: What changes can you make? How can you improve the build? Make any adjustments that are needed.

7. REFLECT: What was your biggest challenge while building the shelter? What materials were the easiest to work with?

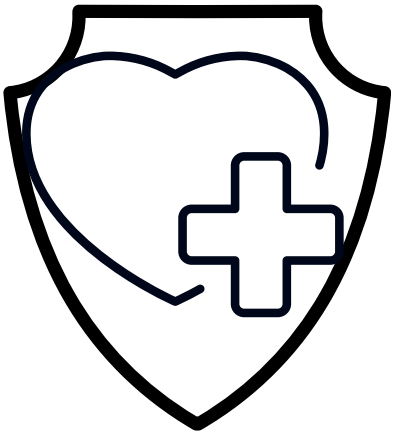
SURVIVAL BADGES

FORAGING



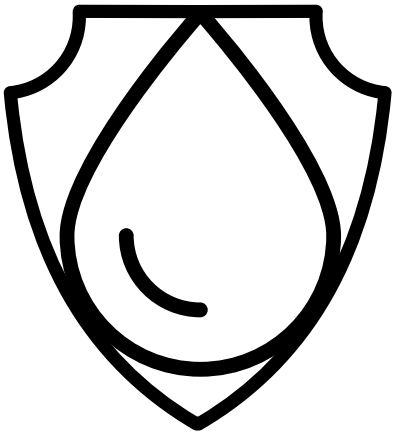
FIRE SAFETY

SHELTER



FIRST AID

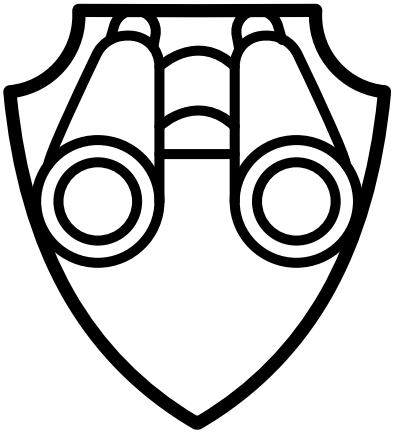
NAVIGATION



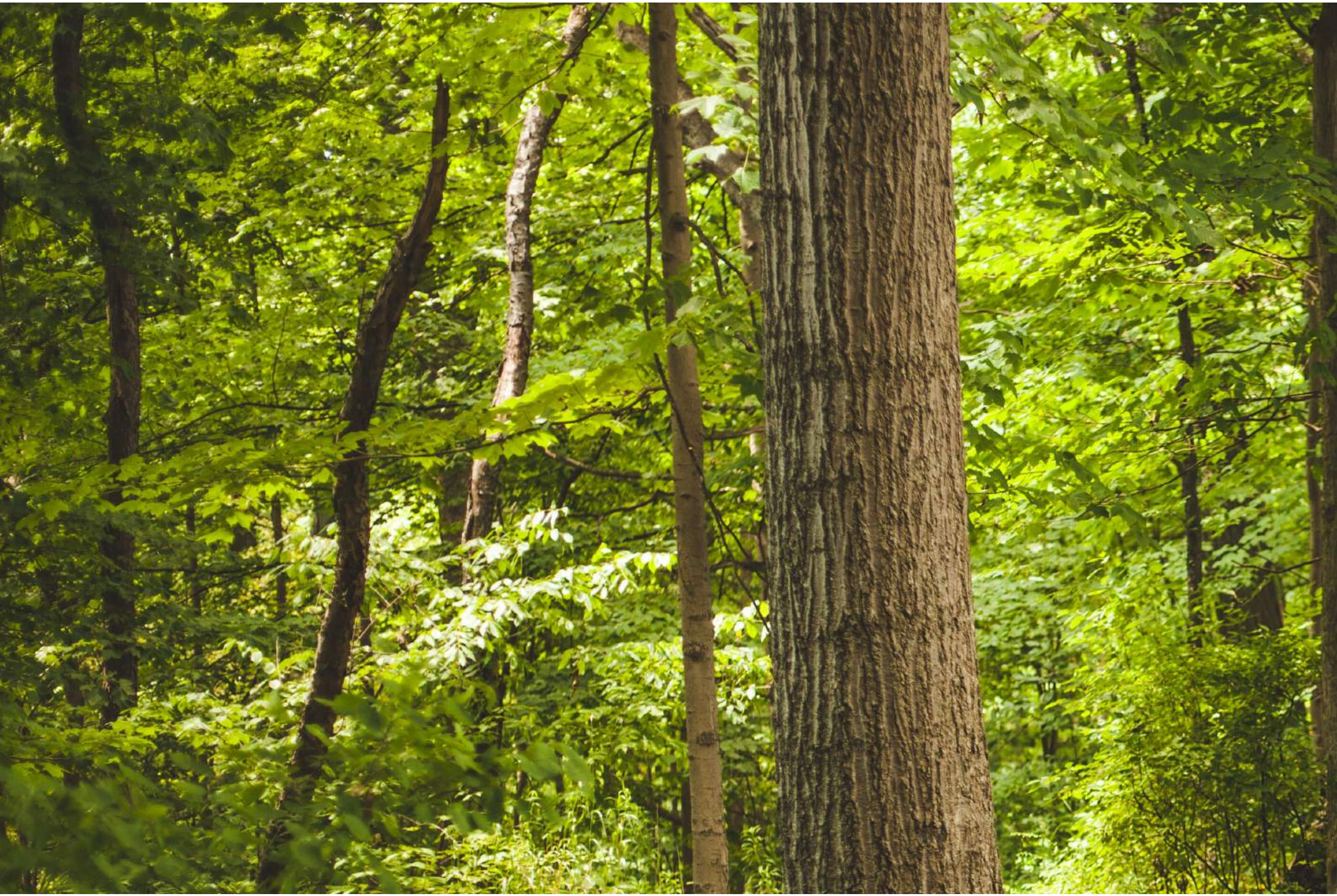
CLEAN WATER

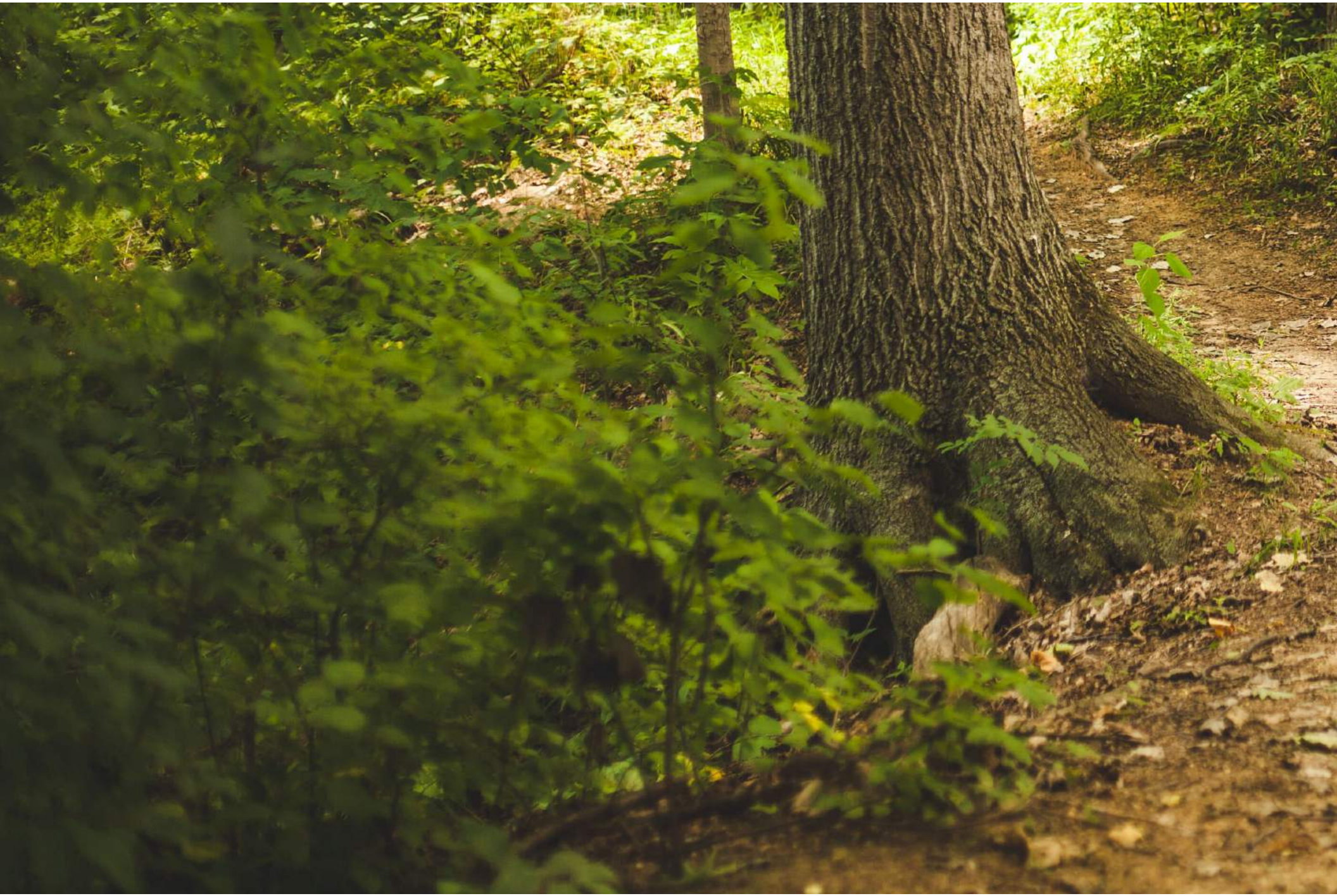
CAMOUFLAGE

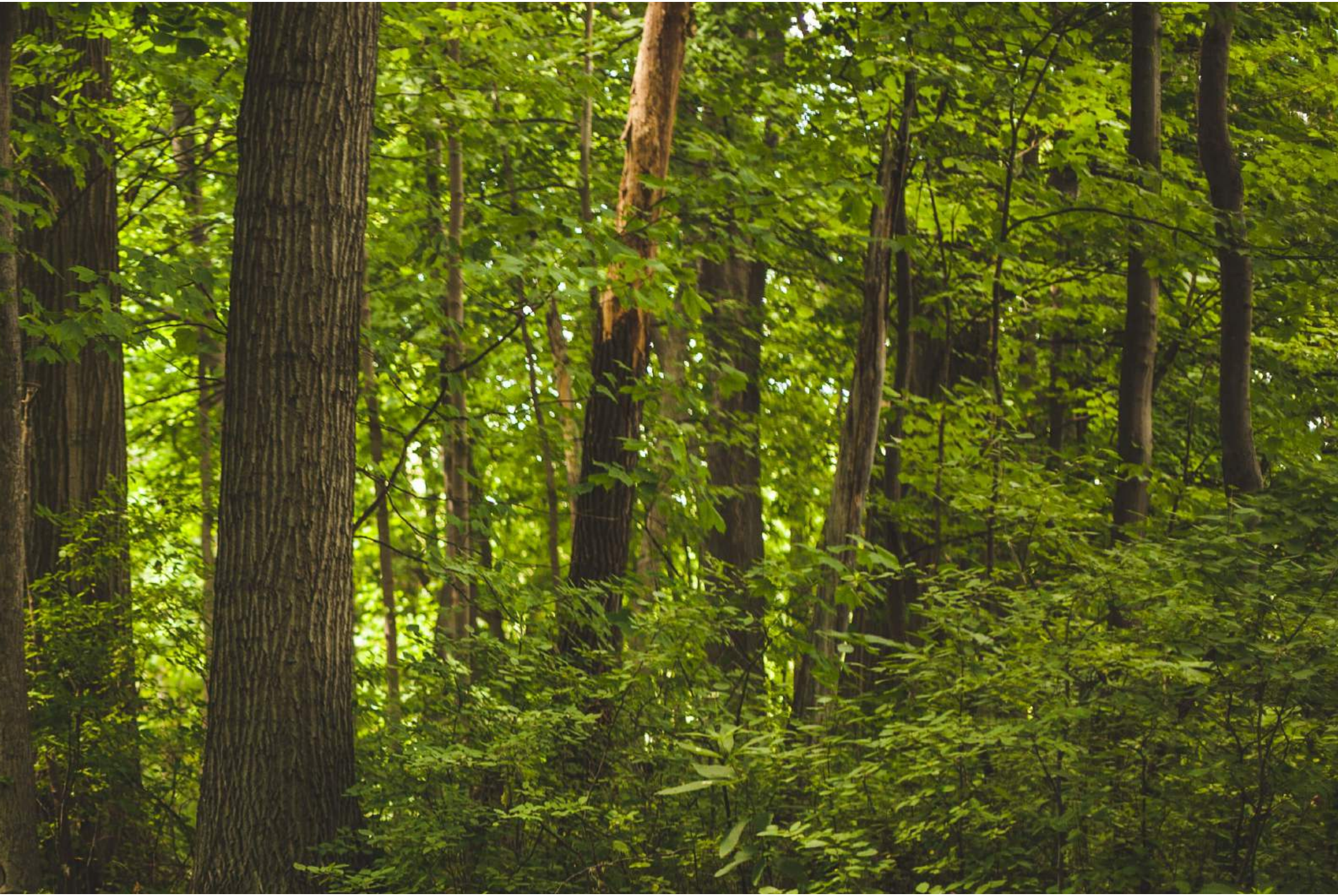
ANIMAL SAFETY

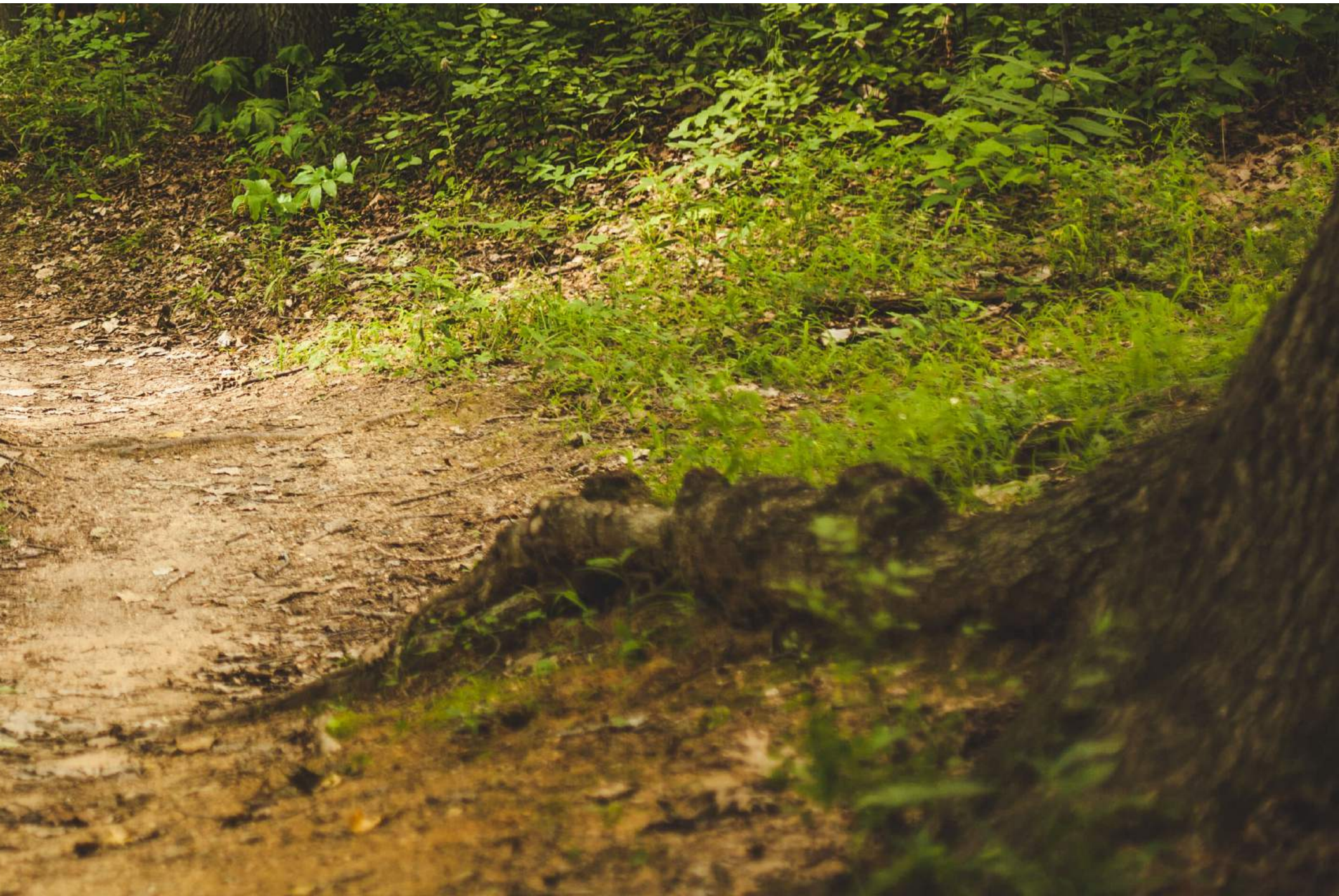


OBSERVATION

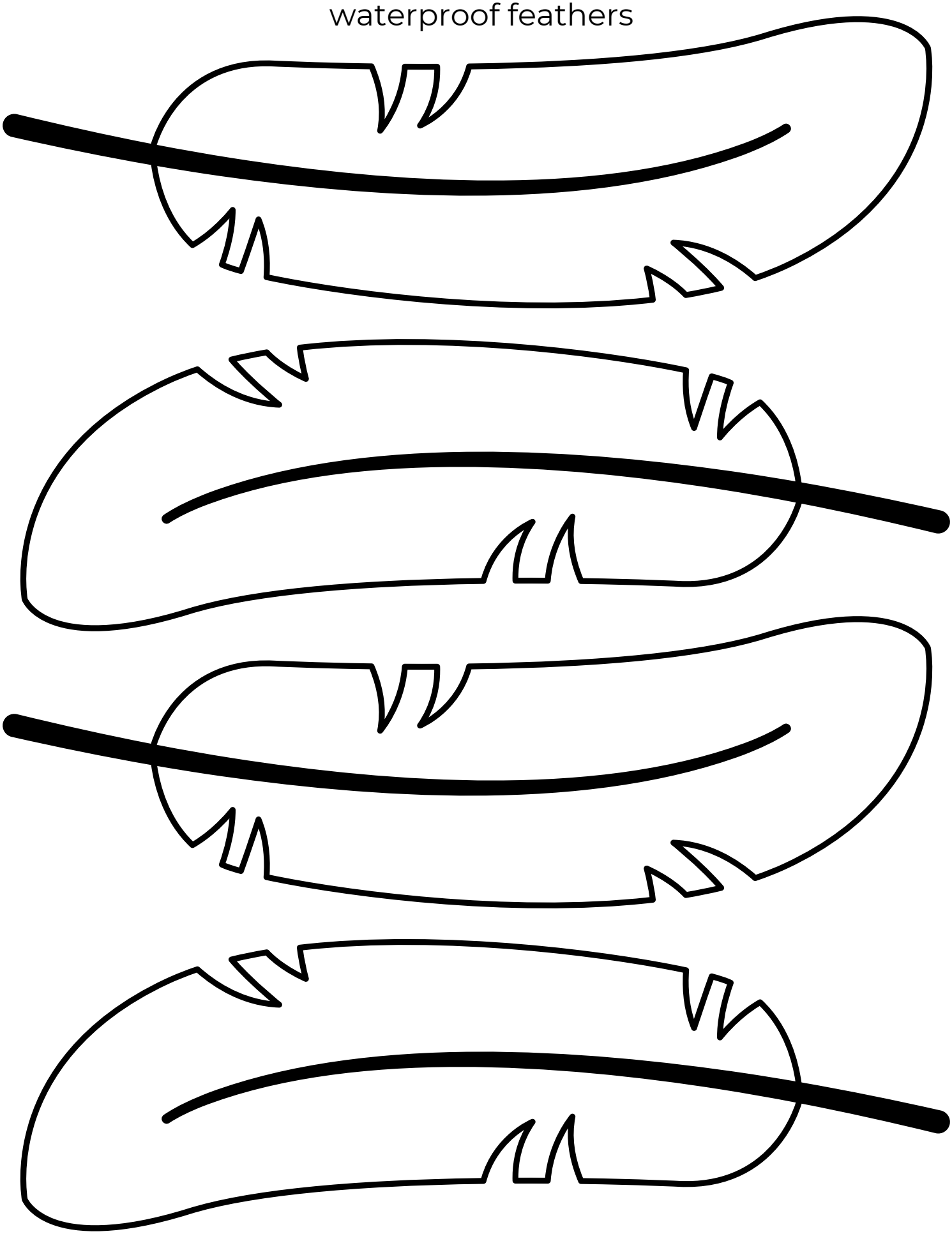






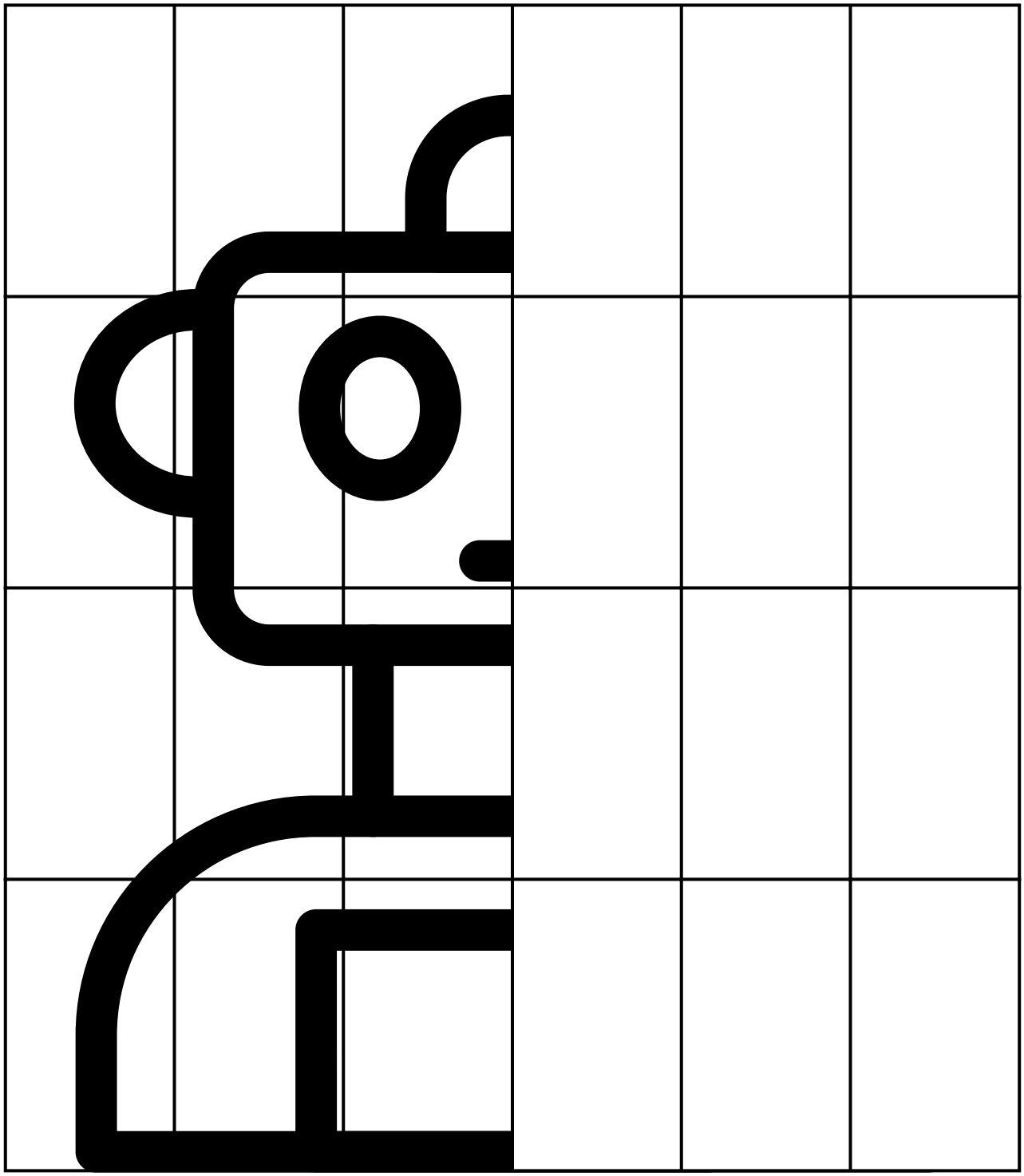


waterproof feathers



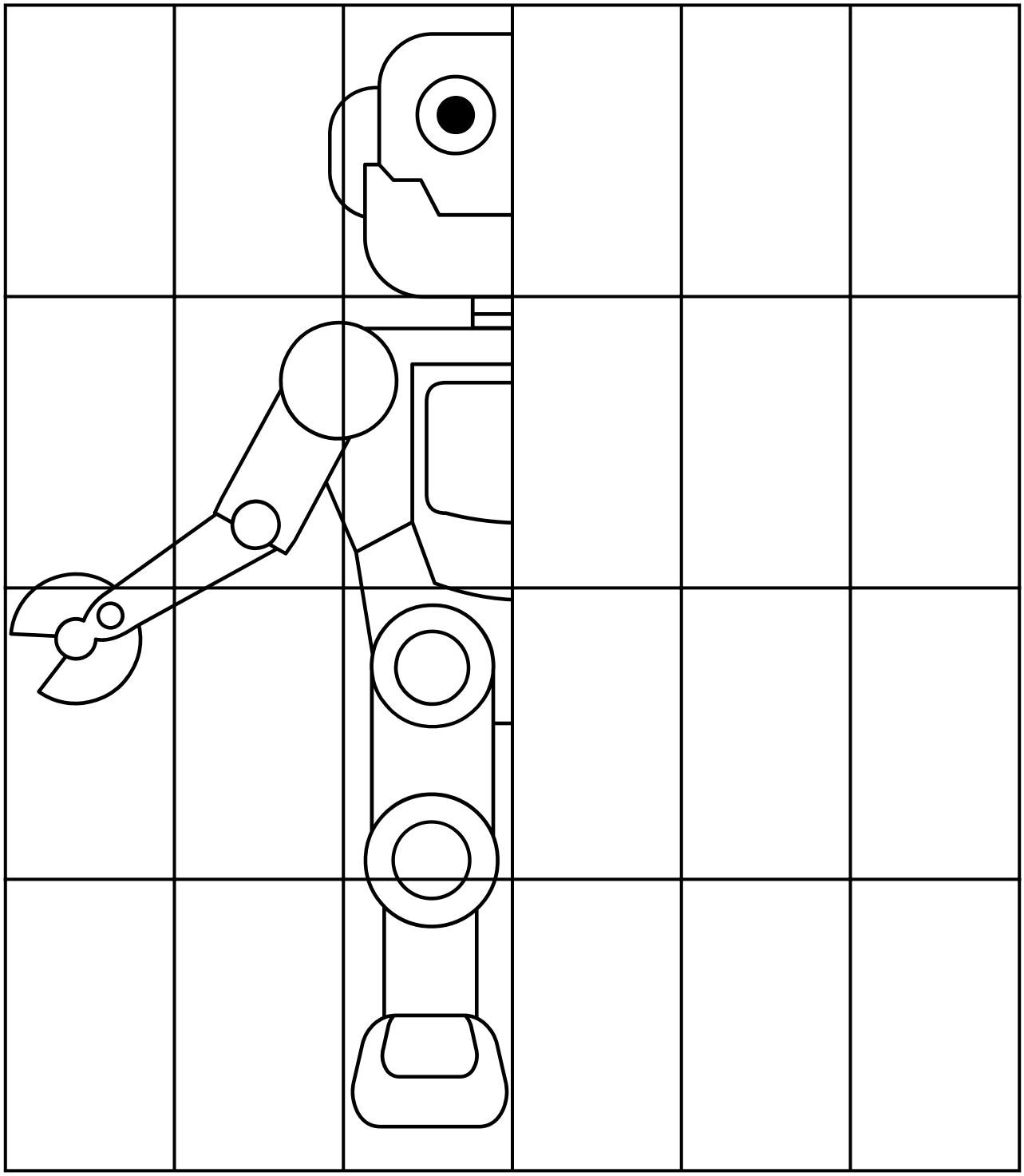
ROBOT SYMMETRY

Complete the picture by drawing and coloring the other half.



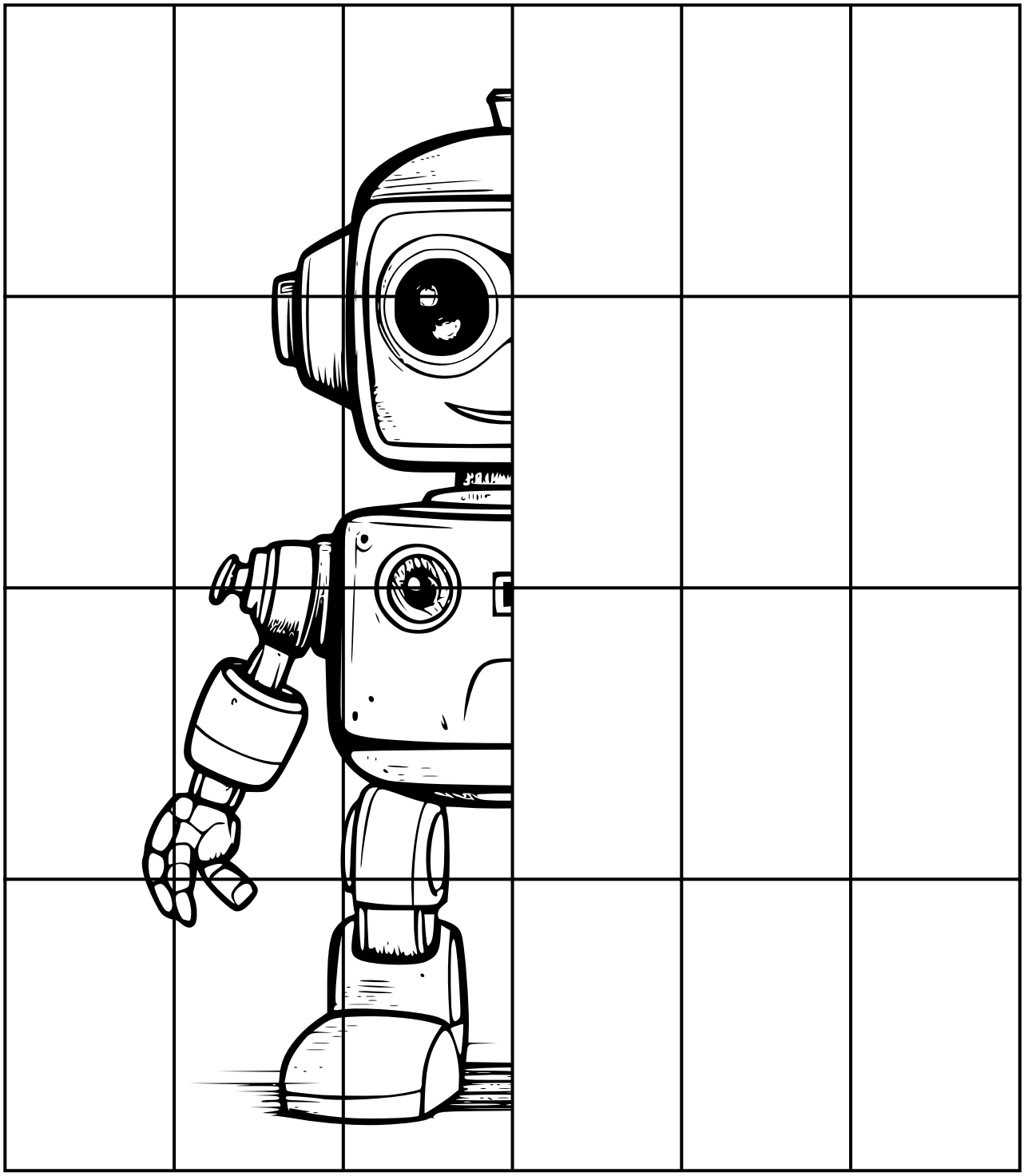
ROBOT SYMMETRY

Complete the picture by drawing and coloring the other half.



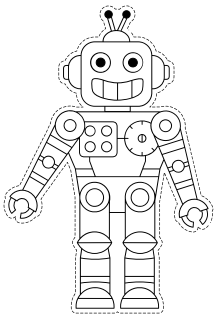
ROBOT SYMMETRY

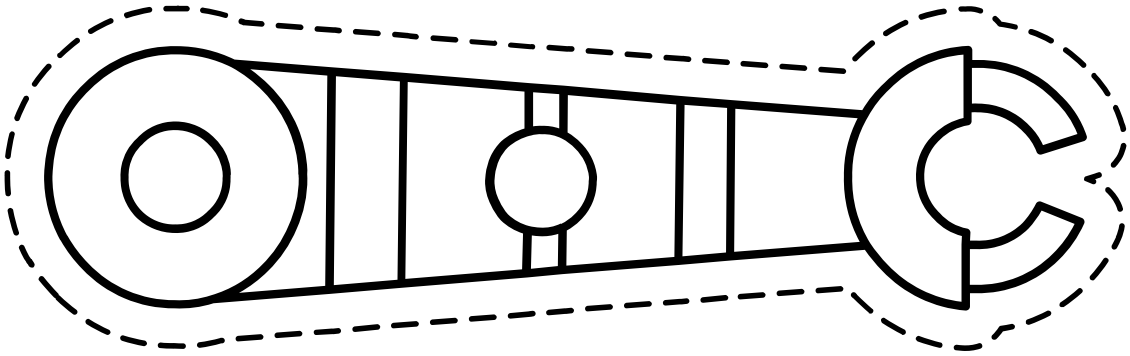
Complete the picture by drawing and coloring the other half.

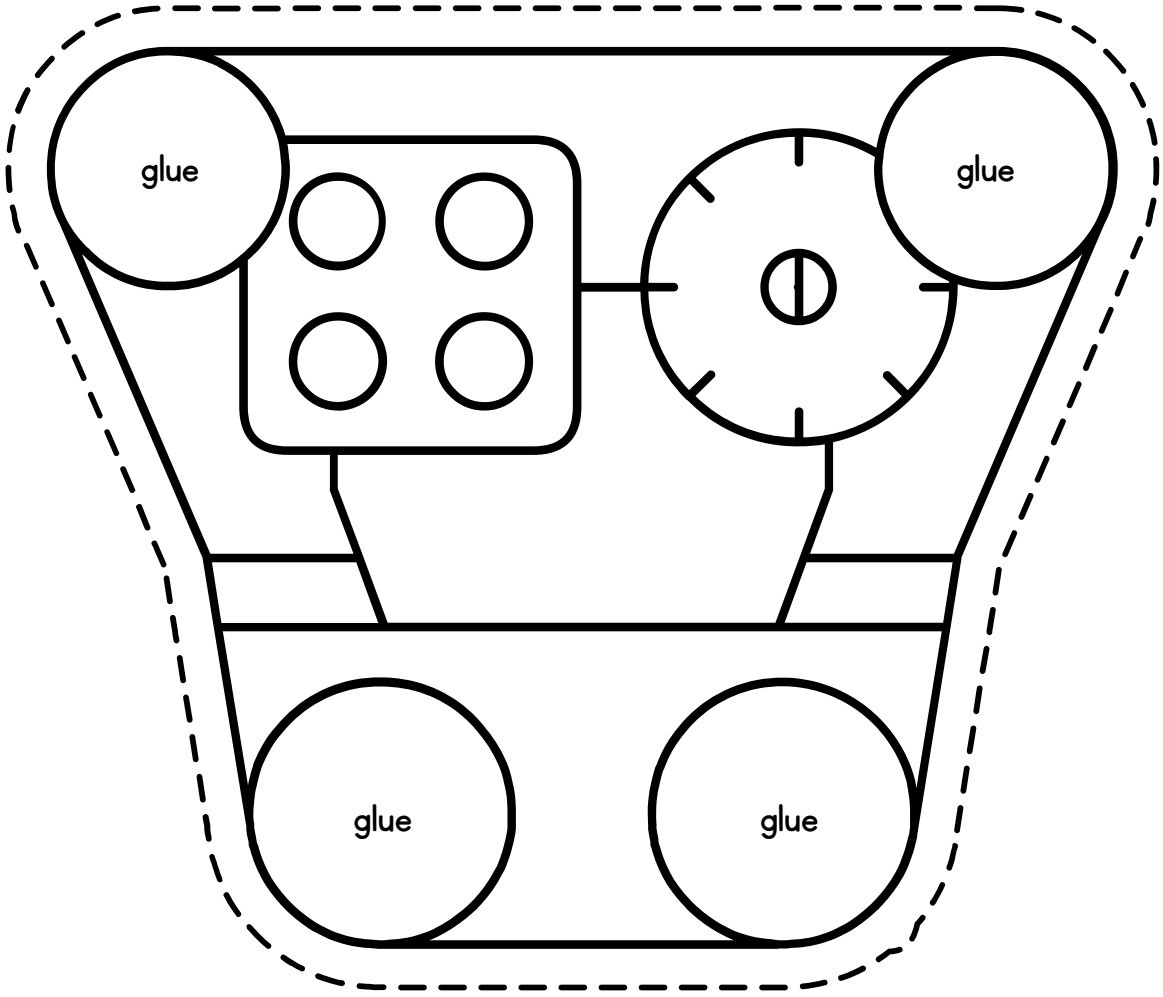


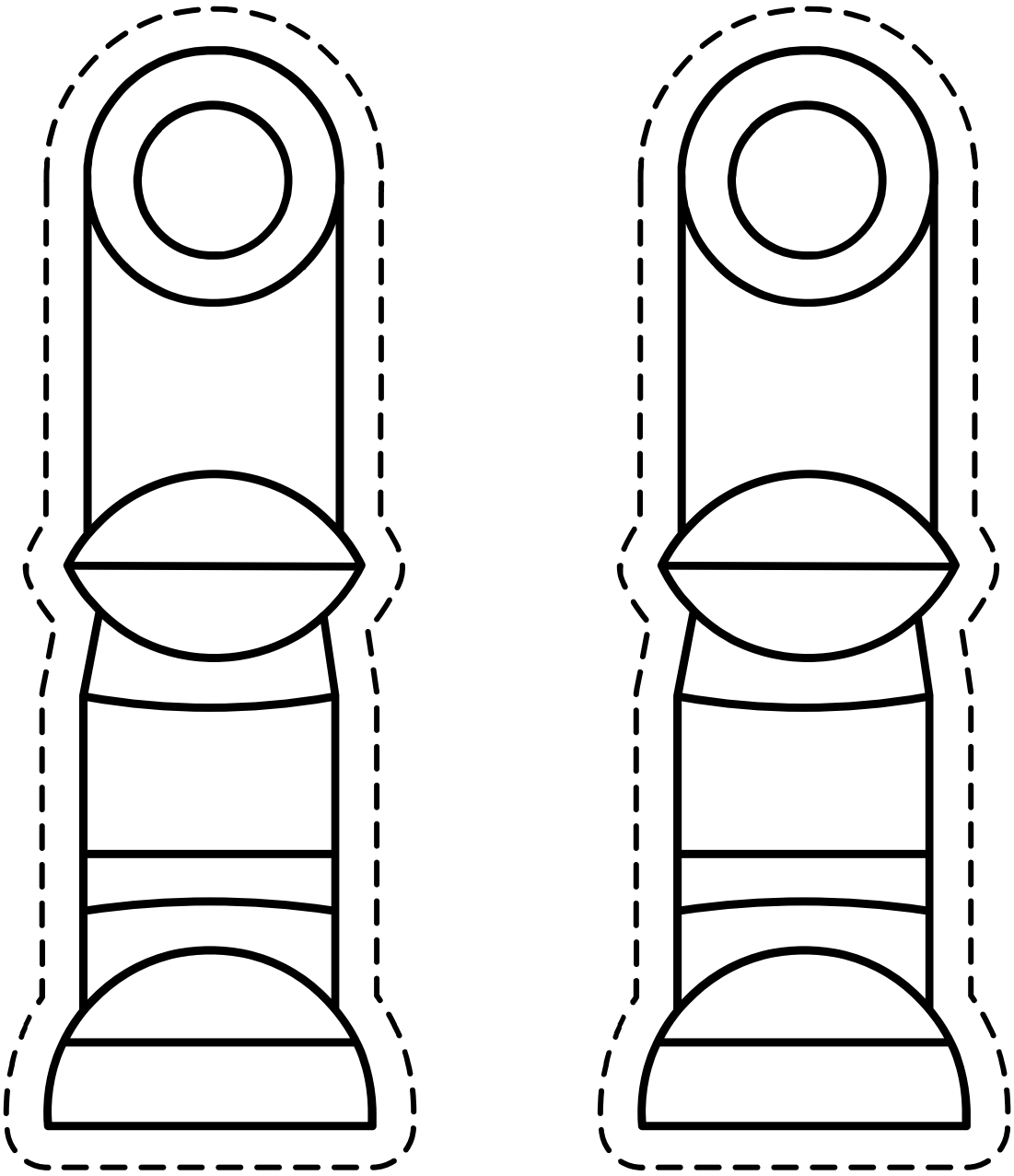
BUILD A ROBOT

Print on thick paper
Assemble the robot by coloring, cutting, and gluing it together.
OR use brass fasteners to make the limbs move.






glue
glue
glue
glue



CREATIVE THINKING

Draw your robot.

Create a name for your robot and label it's parts:

What is the purpose of this robot?

title: _____

GENERAL STATEMENT

Introduce the robot and the purpose of it.

INFORMATION

Provide extra information about why the robot is necessary and how it works.

EXPLANATION

Write, in order, how the robot works.

CONCLUSION

Provide a final explanation of the robot, it's purpose and how it works.

CODING GAME

BLOCK CODING

SAMPLE CODING

- Guide Roz to Brightbill using block codes

CODING AREA

Start

TURN RIGHT

MOVE 3 STEPS

TURN DOWN

MOVE 3 STEPS

TURN RIGHT

MOVE 2 STEPS

STOP

CODE BLOCKS

Turn LEFT

Turn UP

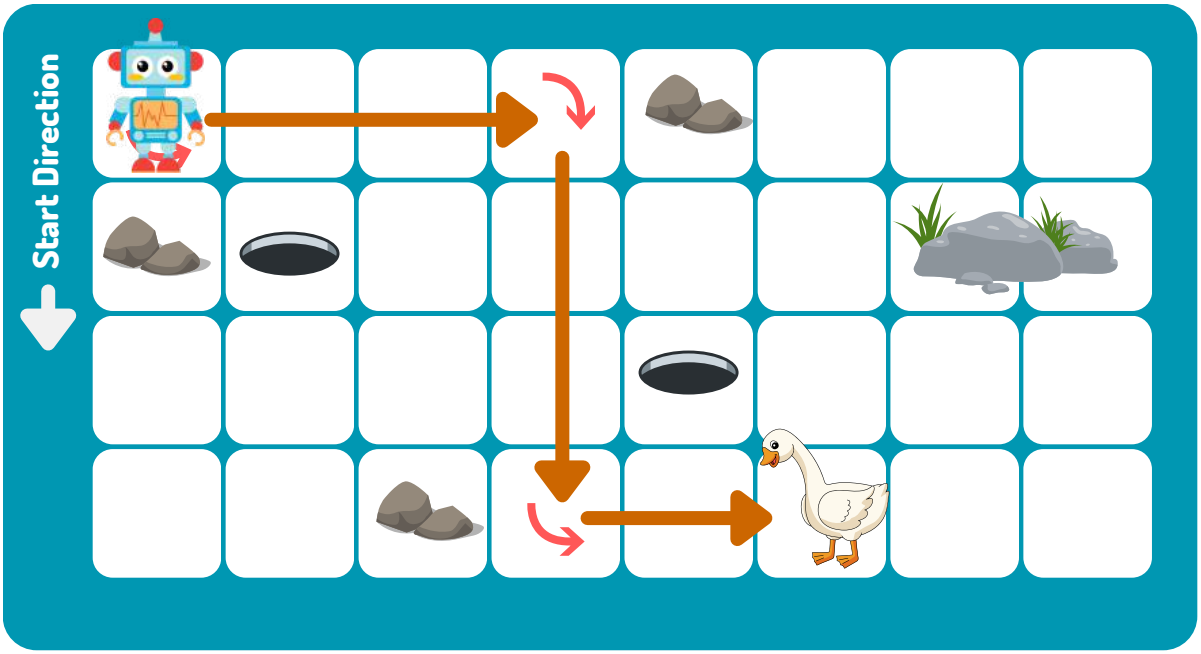
Turn RIGHT

Turn DOWN

1 2 3 4 5 6

Repeat

Move Steps



CODING GAME

BLOCK CODING

Name: .....

- Guide Roz to Brightbill using block codes without falling in a hole. In the coding area below, write the directional codes. For Example: Turn RIGHT. Move 2 STEPS..

CODING AREA

Start

Stop

CODE BLOCKS

Turn LEFT

Turn UP

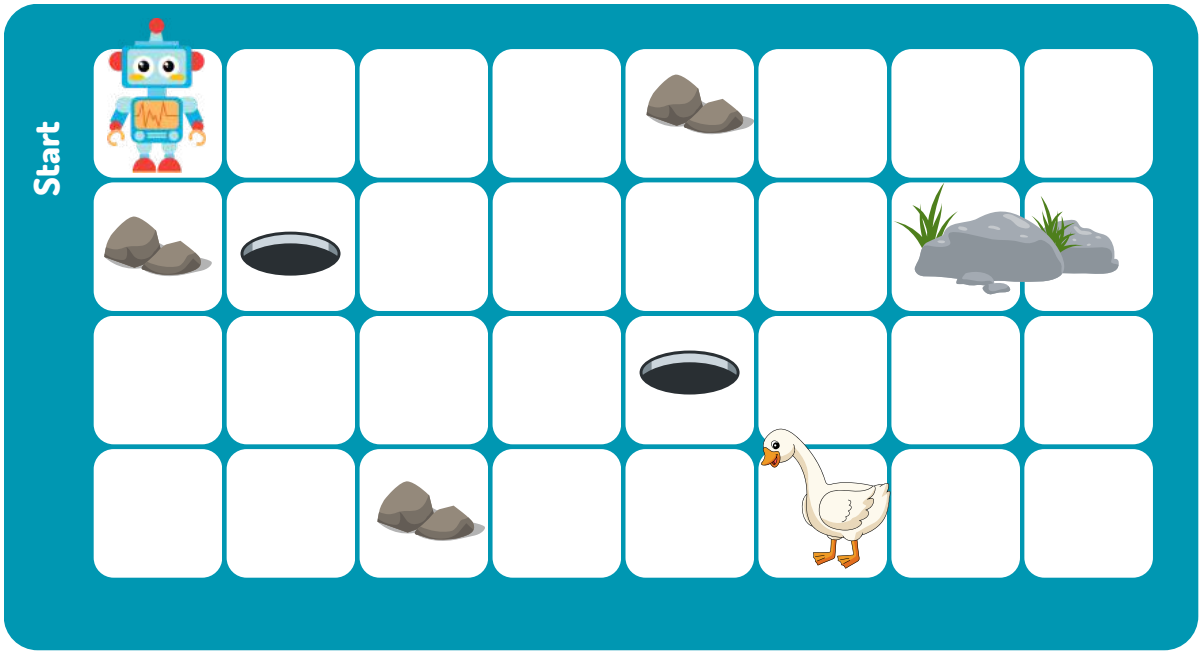
Turn RIGHT

Turn DOWN

1 2 3 4 5 6

Repeat

Move Steps



CODING GAME

BLOCK CODING

Name: .....

- Guide Roz to Brightbill using block codes without falling in a hole. In the coding area below, write the directional codes. For Example: Turn RIGHT. Move 2 STEPS..

CODING AREA

Start

Stop

CODE BLOCKS

Turn LEFT

Turn UP

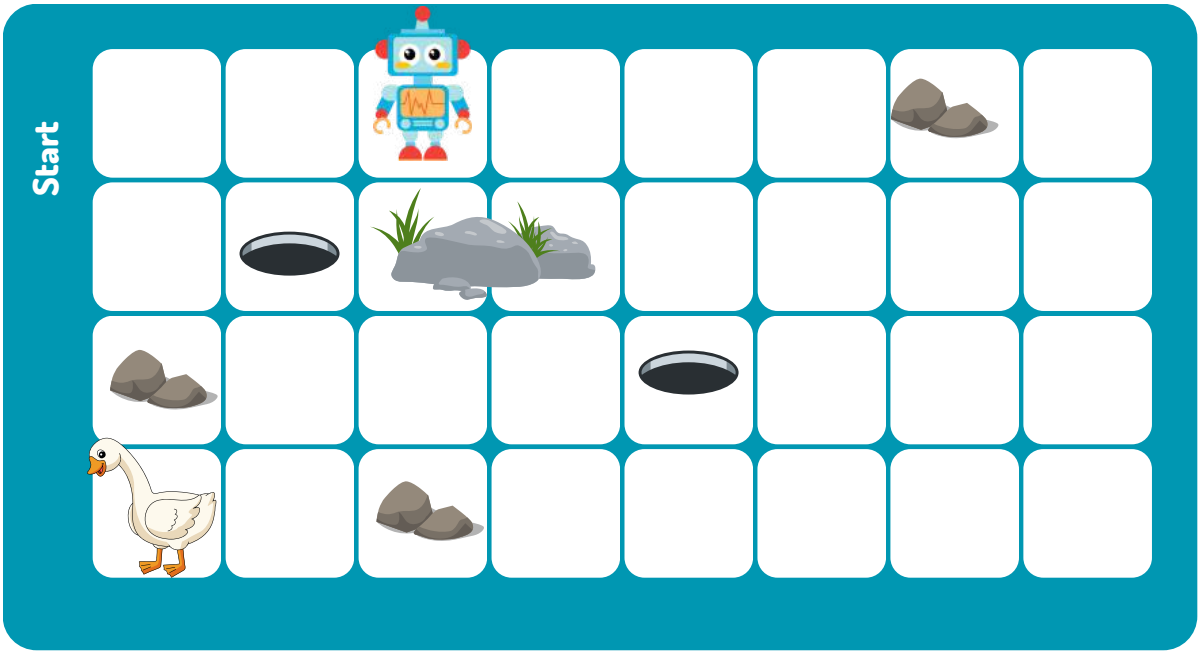
Turn RIGHT

Turn DOWN

1 2 3 4 5 6

Repeat

Move Steps



CODING GAME

BLOCK CODING

Name: .....

- Guide Roz to Brightbill using block codes without falling in a hole. In the coding area below, write the directional codes. For Example: Turn RIGHT. Move 2 STEPS..

CODING AREA

Start

Stop

CODE BLOCKS

Turn LEFT

Turn UP

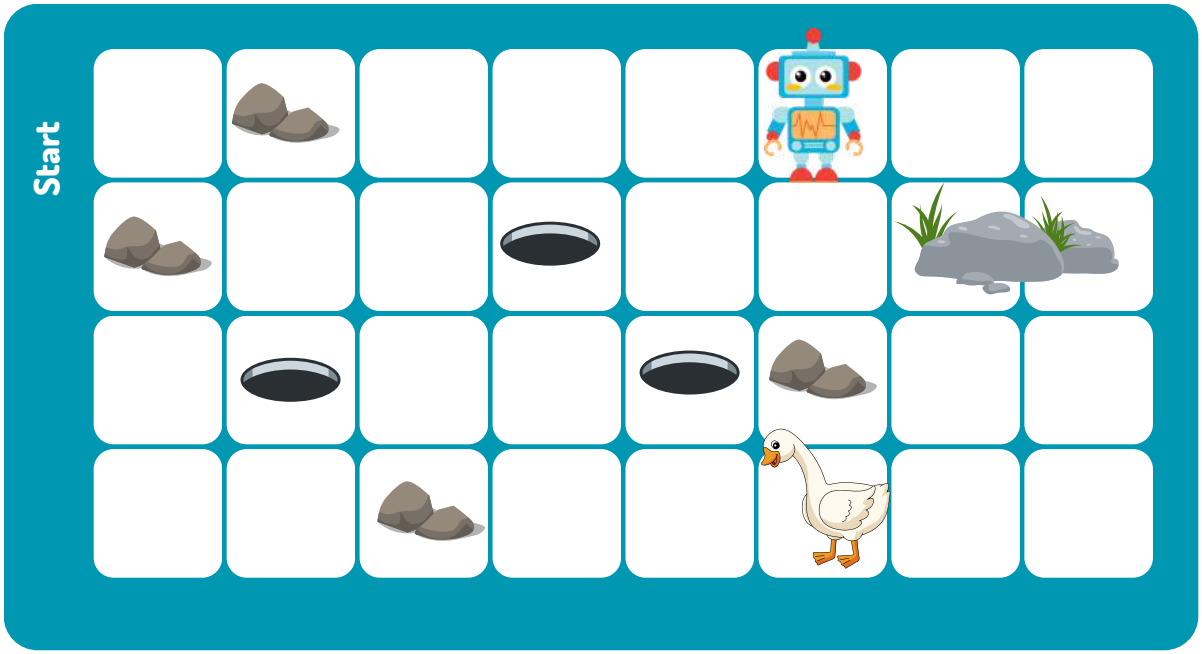
Turn RIGHT

Turn DOWN

1 2 3 4 5 6

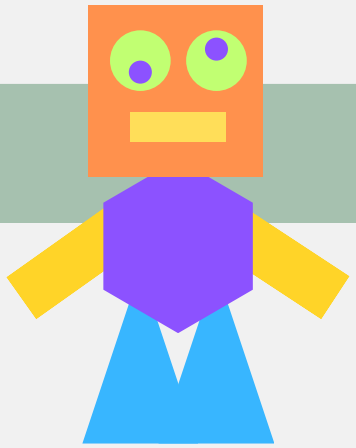
Repeat

Move Steps



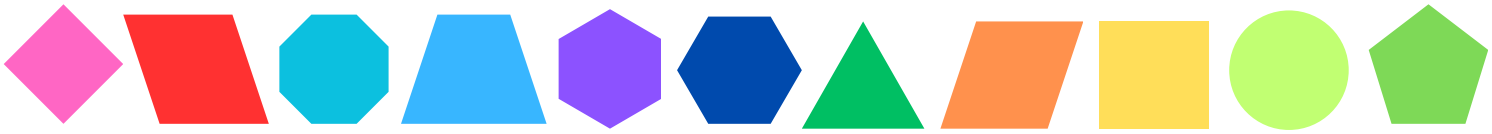
STEM ACTIVITY

Build a Robot with Shapes



Use the following shapes to create your robot. Choose any colors you like. **When you are done, find shapes in your home to bring this robot to life!**

Shapes to choose from



Write a sentence about what your robot can do

My robot can