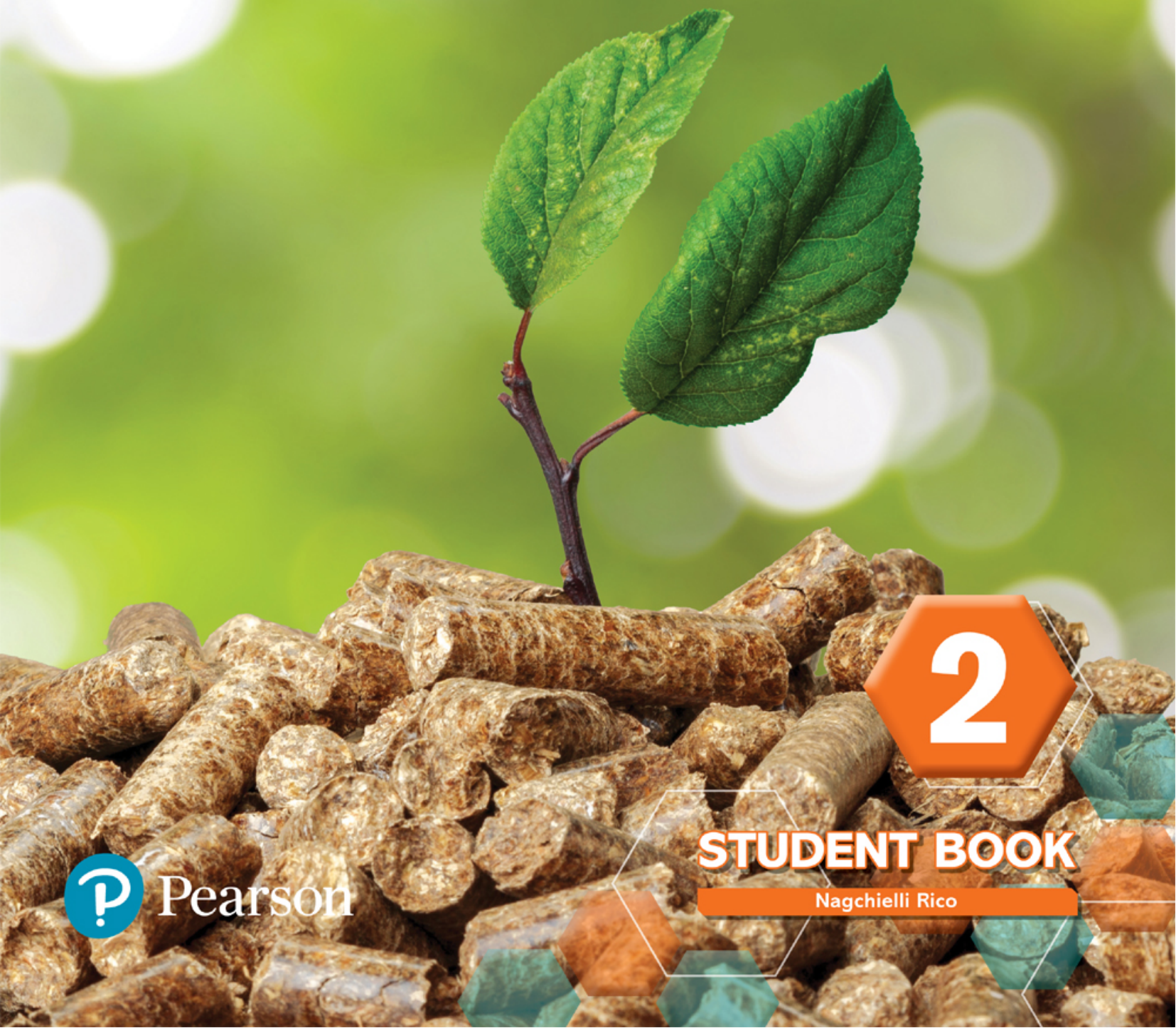
Phenomenal SCIENCE



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STUDENT BOOK

Nagchielli Rico

Pearson

Phenomenal SCIENCE

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STUDENT BOOK

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Pearson

Content Table

Unit 1

How important is technology to you?

Objects Around Me

Look around at all the objects you use in your everyday life. The notebook you write in, the cars you see on the street, and the shoes you wear are objects that have been created to make your life **easier** and more **comfortable**. Most of the **devices** and **tools** we use in our life are made using technology.

Word Box

easier
comfortable
devices
tools

1. **In your notebook, list five devices and tools you use.**

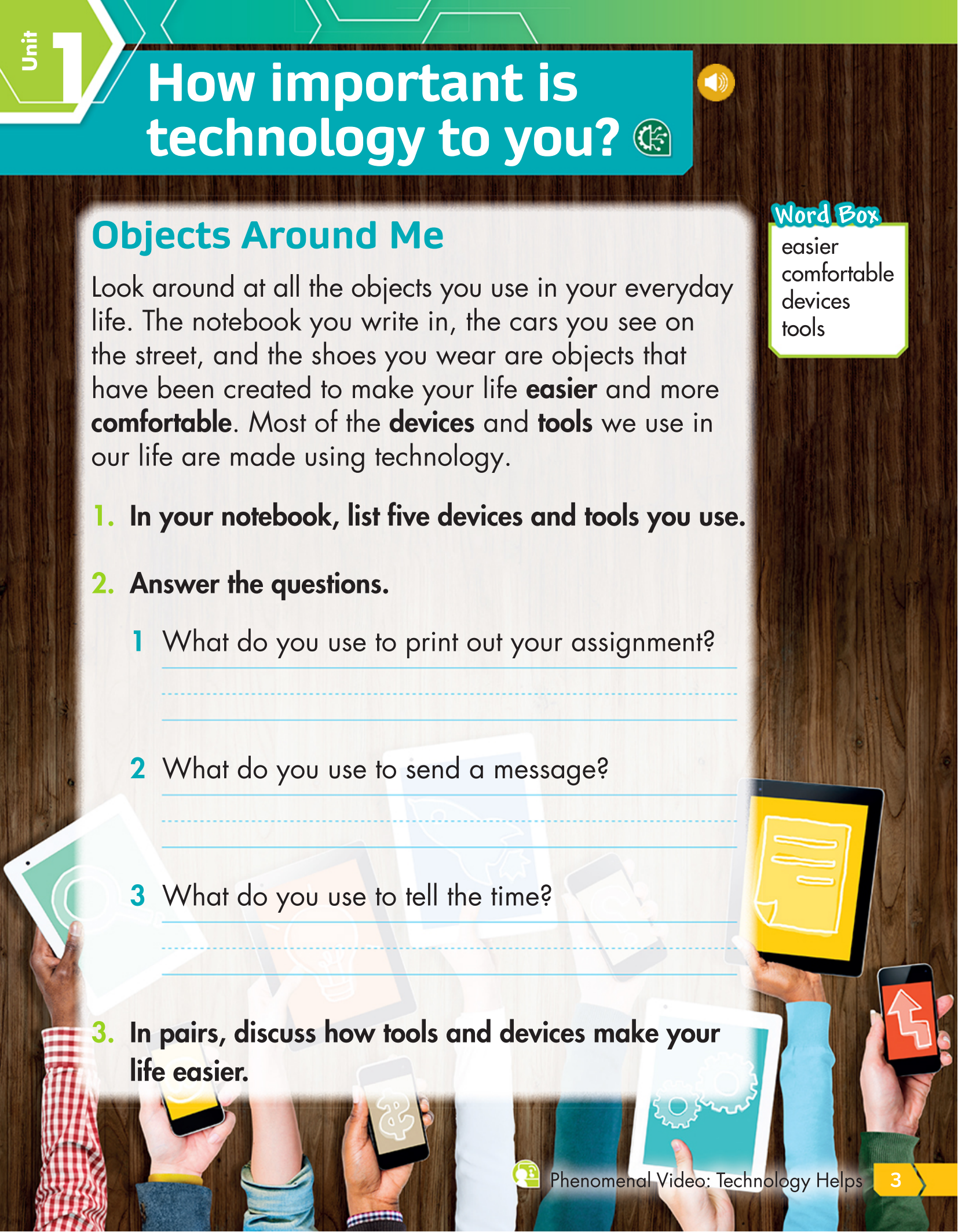
2. **Answer the questions.**

   1 What do you use to print out your assignment?

   2 What do you use to send a message?

   3 What do you use to tell the time?

3. **In pairs, discuss how tools and devices make your life easier.**



Lesson 1

What is technology?

Science and Technology

Scientists use **technology** to make **discoveries**. Technology is the use of science to find new ways of solving everyday problems. Computers, robots, digital cameras, drones, and cars are all examples of technology. Each was created as a solution to a problem. Drones help scientists get to places where they cannot go, for example, into an active or erupting volcano, or to another planet. Scientists are constantly discovering new technologies to make our lives easier.

Word Box

scientists
technology
discoveries

1. **Circle the correct words to complete the sentences.**

   1 The purpose of **technology** / **drones** is to find solutions to problems people face.

   2 **Cars** / **Volcanoes** are examples of technology.

2. **Circle the objects you have and, in your notebook, explain what you use them for.**

1 

2 

3 

4 

3. **In pairs, describe your favorite device. Guess your classmate's device.**

Science and technology are very important because they help us to **improve** our lives. Over the years, scientists have used technology to do their **research** and to work on their projects. **Telescopes**, **microscopes**, cameras, and robots are some examples of technology that scientists have been using for decades to help in their research.

Word Box

improve
research
telescopes
microscopes

microscope

telescope

4. Imagine you are a scientist. In your notebook, write what you would use these for.

1 telescope 2 microscope 3 camera

5. Circle True or False.

1 Technology is used to improve lives. **True** **False**

2 Scientists use technology in their work. **True** **False**

3 Science is important because it uses robots. **True** **False**

6. In pairs, discuss what technology and science have in common.

Life and Technology

What would your life be like with no **computers**, **tablets**, TV, **internet**, or cell phones? All these objects work thanks to technology. The internet has transformed the way we gather information, interact with friends and family, and entertain ourselves. That's why it is considered the most important technological advancement in the last century.

Word Box

computers
tablets
internet

7. Look at the pictures. In pairs, discuss how these phones are different.

1

2

5

8. In your notebook, write three rules about staying safe when using the internet. In pairs, compare your ideas.

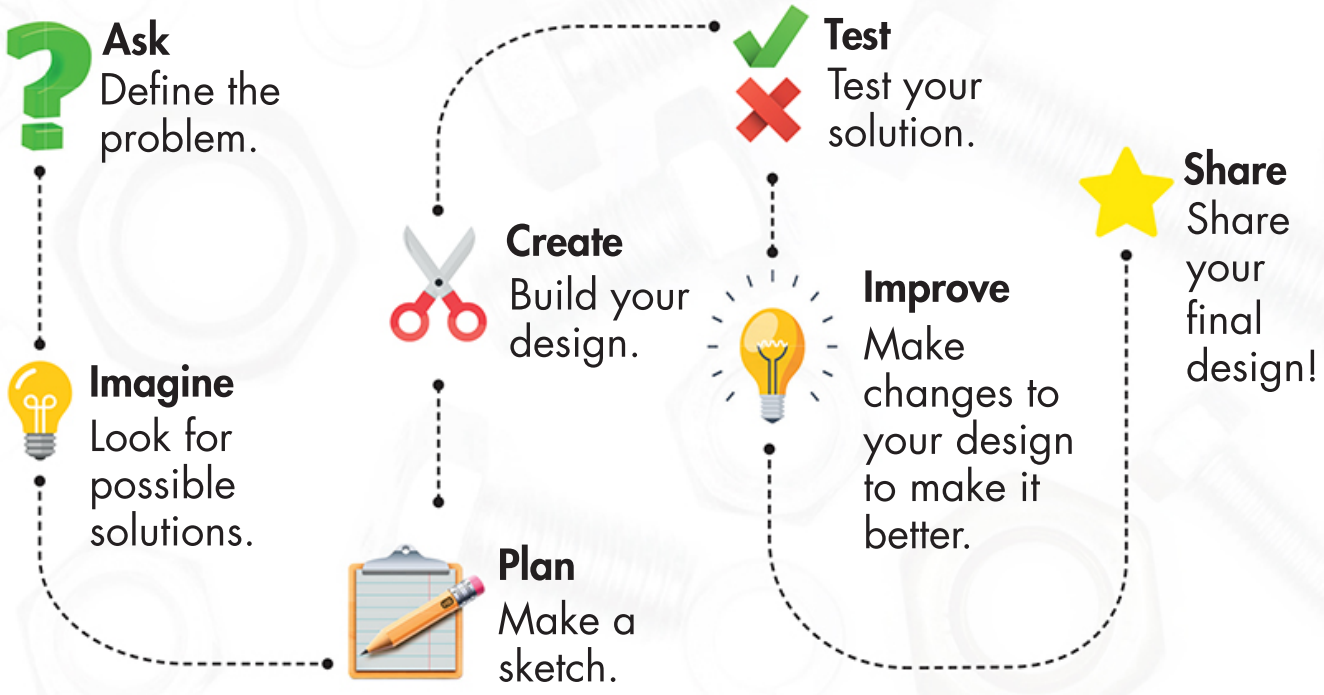
9. Imagine a world without the internet. In pairs, discuss what it would be like.

What is the design process?

The Design Process

Word Box
design process
creativity

Whether your goal is to create a toy, a pen, a wheelchair, or a spacesuit, there is always a **design process** you need to follow. The design process helps you to identify problems, look for possible solutions, organize ideas, and develop your **creativity**.



1. Look at the diagram above. Circle True or False.

1 The first step of the design process is to share your ideas. **True** **False**

2 You need to plan before creating. **True** **False**

3 You need to improve your design before sharing it. **True** **False**

Ask and Imagine

Let's **imagine** you are going to design a pencil case.

The first step of the design process is to **ask**: *What's the problem I want to **solve**? Whenever I need a pencil, I can't find it easily in my pencil case.*

The second step is to imagine and think about all the possible solutions for the problem: *I need a pencil case that is see-through, durable, and made of recycled materials.* What other ideas can you think of?

Word Box

imagine
ask
solve

2. Write the characteristics of each pencil case in your notebook.

1 

2 

3 

3. In pairs, list some ideas for your pencil case in your notebook. What will it look like? How big will it be? How would you open and close it?

Plan

Draw a **sketch** of what you want your pencil case to look like. Consider the **size** and think of possible materials to use. Make a list of what you will need, including **recycled materials**, so your pencil case is **eco-friendly**. This is a very important step because your final product should look the way you planned it.

Create

Once you have decided which materials to use, put your plan into action! **Build** your design! Make sure to look back at your sketch and to follow the plan.

Word Box

sketch
size
recycled materials
eco-friendly
build

4. **Underline the correct meaning of eco-friendly.**

   1 To use new materials only.

   2 To not damage the environment.

5. **In your notebook, sketch your ideas for the pencil case.**

6. **In pairs, discuss how the sketch helped you to create your pencil case.**

Lesson 3

Why do you need to evaluate and share?

Does it work?

Now that you've created a solution to your problem, you need to **test** it. Ask some of your classmates to **try it out**. Does it solve the problem you had in the beginning? Ask your classmates for their **feedback**. Ask them what they like about your pencil case and what can be improved. Be open to their feedback and take notes.

Word Box

test
try it out
feedback
improve
change

Make It Better

Evaluate the feedback given by your classmates. Ask yourself how you can **improve** your design based on their feedback. Do you need to **change** the material, the color, or the way it works?

1. **Look at the pictures. In your notebook, write ways in which you could improve the design of these objects.**

1

2

2. **In pairs, compare your ideas about how to improve the objects in Activity 1. Whose ideas work better?**

Share It!

Now that your solution is final, you need to **share** it! Show your pencil case to your friends. This is the last step of the design process. **Reflect** on the work you have done and be proud of your effort. Was the design process helpful? Did you follow the steps?

Word Box

share
reflect

3. In pairs, discuss why it is important to share your inventions.

4. Circle the invention you think is the most useful to humanity.

1 

2 

3 

5. Investigate who invented the following things.

1 

airplane

2 

color TV