

## Personal Project and Effective Research

---

### Textbook

---

## Personal Project and Effective Research



Doing research means looking for information to learn new things. You can do research using tools on the internet, like search engines or online encyclopedias. You can also find information in books, magazines, and other places.

To do good research, think about important questions and use the right words when you search.

### Essential Questions

An essential question helps us learn about a topic.

For example, if you're learning about space, some important questions might be:

- What are the different planets in our solar system?
- How do astronauts live in space?

### Keyword Searches

[Keywords](#) are important words about your topic that help you find good information.

To find good keywords, look at your essential question(s) and pick out the most important words. You can also think of other words that mean the same thing.

For example, some good search words from our first question could be "solar system planets" or "planets in space."



The more specific your search words are, the better your results will be. You can also use specific words like "Mars," "Jupiter," "Saturn," and "Neptune" to learn more about specific planets.

## Safe Search

When you use a search engine (like Google or Bing), it's important to use its **safe-search feature**. This tool helps to filter out (block) websites that might have bad or inappropriate pictures and words. It helps keep your searches clean and safe for kids.

## Reliable Resources

After you search for your words, you can read through different sources to find good information. Good reliable sources are ones you can trust. Bad sources are ones you can't trust.

Comparing Digital Resources: When you find information online, always ask:

- Is it Accurate? Is the information correct? Does it make sense with other things you know?
- Is it Relevant? Does this information actually help answer your question, or is it about something else?
- Is it Appropriate? Is it okay for kids your age to look at?

You can tell if a source is good if:

- You can find who wrote it.
- The website ends in .edu, .gov, or .com.
- The source says where it got its information from.

If you can't find these things, or if the information seems too silly or unbelievable, the source might not be good. Always use good, trustworthy sources to **support your ideas** using the evidence you find!

## Databases: Organized Information

A database is like a super organized collection of information. It's built to store and find data quickly. You use databases every day without even knowing it!

Here are some examples:

- Barcode Categories: When a checker scans items at the store, the barcode connects to a database that knows the item's name and price.
- School Records: Your school keeps a database of all student names, grades, and classes.
- Telephone Directories/Contact Lists: The list of contacts in your phone is a small database of names and numbers.
- Library Catalogs: When you search for a book at the library, you're looking through a database of all their books.

Databases help us keep information tidy and easy to find!

## Creating Digital Projects: Sharing What You Learn

After you do research, it's time to create a digital project to share what you've learned! This could be a presentation, a video, a website, or even a computer program like one on your micro:bit.

Your digital project should:

- Answer your research question: Show what you found out.
- Clearly communicate your thoughts and ideas: Make it easy for others to understand.
- Use the evidence you collected: Show where your ideas came from by including details from your research.

## Giving Credit: Citing Your Sources

When you use information from research in your project, it's very important to **cite your evidence**. This means telling people *where* you found your information.

Why Cite Your Sources?

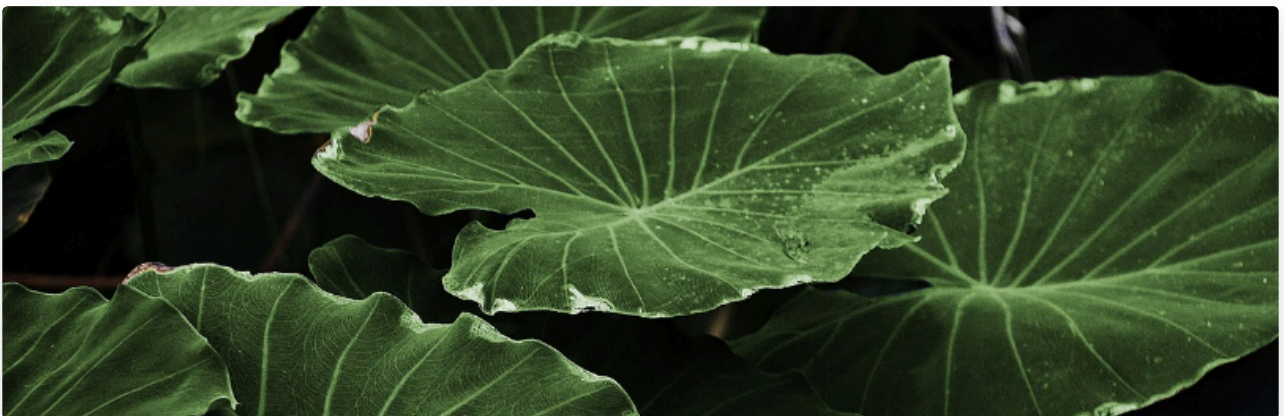
- **It's Fair:** It gives credit to the people who did the hard work of finding that information first.
- **It Shows You're Trustworthy:** When you show where your facts came from, people know your information is reliable.
- **It Helps Others Learn More:** If someone wants to learn even more about your topic, they can look at the same places you did.

## How to Cite

When you write or talk about your research, simply mention where you found the information.

- "According to the website NASA Kids, astronauts eat special food in space."
- "I learned from a book called *The Magic of Plants* that some plants like soft music."
- "A video I watched explained that..."

## Plants and Melodies



Plants need sunlight, water, and soil to grow. However, some scientists believe that music can play a role, too. Imagine if the sounds we hear can make plants grow better or faster!

- **Vibrations:** Plants can feel vibrations, just like when you touch their leaves. Music is all about vibrations in the air that we hear as sound. Some scientists think that these vibrations might tickle the

plants in a way that makes them grow better. It's like a musical massage for our green friends!

- **Harmonies:** Have you ever noticed that when you hear your favorite song, you feel happy and energized? Well, plants might feel the same way! Some studies suggest that playing cheerful tunes might put plants in a good mood and encourage them to grow.
- **Serenades:** Plants might also enjoy a relaxing serenade. Slow and calm music could create a peaceful environment for them. Just like how you might sleep better with a lullaby, plants might grow better with soothing tunes.

For today's challenge, research what kinds of melodies affect plants. Then, use that research to create a program of at least 5 different melodies on the micro:bit that can be played to help a plant grow.

Consider playing your programmed melodies for a plant or plants in your classroom. Practice citing your sources as you tell about your project!

## Critical Thinking Questions

- Imagine you want to find out how bees make honey. What words would you type into a search box to get the best information, and why would those words be good choices?
- If you read something on the internet that sounds very surprising, how can you check to see if that information is really correct or if it's just an opinion?
- Why is it important to ask a broad question, like "How do animals communicate?" instead of a simple question like "What sound does a dog make?" when you're trying to learn something new?

## Questions (5)

### 1. What is an essential question?

MULTIPLE CHOICE

Choose the correct answer:

- A. A silly question
- B. A question that's hard to answer
- C. A very important question about a topic
- D. A question with a funny answer

### 2. What is a keyword?

MULTIPLE CHOICE

Choose the correct answer:

- A. A word that's hard to spell
- B. A random word you like
- C. An important word about your topic
- D. A word in a secret code

**3. Why is it helpful to use specific words when you search online?**

**Choose the correct answer:**

- A. You get fewer results
- B. You get better and more useful results
- C. You get more variety of websites
- D. You don't have to use the search engine

**4. Which of these is a good example of a keyword search about planets?**

**Choose the correct answer:**

- A. Why space is crazy
- B. Space
- C. My favorite planet
- D. Solar system planets

**5. What is one way to know if a website is more reliable?**

**Choose the correct answer:**

- A. It looks professional
- B. It ends in .edu or .gov
- C. It has links
- D. It has research on it

## Games (2)

### 1. Personal Project and Effective Research Typing


Full Screen

Audio

Instructions

Restart

Pause



0s 100%

Doing research means loc

### 2. Personal Project and Effective Research Categories

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

Check Order

Attempts: 0

You can find who wrote it.

It doesn't say where the information came from.

The website ends in .edu, .gov, or .com.


There are lots of spelling or grammar mistakes.

The source says where it got its information from.

It tries to sell you something more than inform you.

Ways to See if a Website Might Be Reliable

Ways a Website Might Not Be Reliable



# Robotics Challenges (1)

## 1. Plants and Melodies

Challenge

Textbook

Plants and Melodies

Research suggests that music can affect plants. Create a program of at least 5 different melodies on the micro:bit that can be played to help a plant grow. A different melody should play when:

• Button A is pressed

• Button B is pressed

• Buttons A and B are pressed

• The logo is pressed

• When the micro:bit shakes

Requirements

Play a melody when Button A is pressed.

Play a melody when Button B is pressed.

Play a melody when Buttons A and B are pressed.

Step 1

Program the micro:bit to play a melody when you press Button A.

Plants and Melodies Step 1 of 5

1

Next

Toolbox

Search...

Basic

Input

Music

Led

Radio

Loops

Logic

Variables

Math

Extensions

Advanced

forever

Download

Micro:bit

Program

---

## Answer Keys & Solutions

---

### Questions

---

#### 1. What is an essential question?

MULTIPLE CHOICE

**Correct Answer:**

- A. A silly question ✗ Incorrect
- B. A question that's hard to answer ✗ Incorrect
- C. A very important question about a topic ✓ Correct
- D. A question with a funny answer ✗ Incorrect

**Explanation:**

It helps guide your research.

#### 2. What is a keyword?

MULTIPLE CHOICE

**Correct Answer:**

- A. A word that's hard to spell ✗ Incorrect
- B. A random word you like ✗ Incorrect
- C. An important word about your topic ✓ Correct
- D. A word in a secret code ✗ Incorrect

**Explanation:**

You use these in a search to find the best info.

#### 3. Why is it helpful to use specific words when you search online?

MULTIPLE CHOICE

**Correct Answer:**

- A. You get fewer results ✗ Incorrect



B. You get better and more useful results

✓ Correct

C. You get more variety of websites

✗ Incorrect

D. You don't have to use the search engine

✗ Incorrect

#### 4. Which of these is a good example of a keyword search about planets?

MULTIPLE CHOICE

**Correct Answer:**

A. Why space is crazy

✗ Incorrect

B. Space

✗ Incorrect

C. My favorite planet

✗ Incorrect

D. Solar system planets

✓ Correct

**Explanation:**

It uses strong, clear topic words.

#### 5. What is one way to know if a website is more reliable?

MULTIPLE CHOICE

**Correct Answer:**

A. It looks professional

✗ Incorrect

B. It ends in .edu or .gov

✓ Correct

C. It has links

✗ Incorrect

D. It has research on it

✗ Incorrect

**Explanation:**

Certain endings on website URL's often mean the site is trustworthy.

## Games

### 1. Personal Project and Effective Research Typing

## **2. Personal Project and Effective Research Categories**

### **Category Solutions:**

#### **Category 1: Ways to See if a Website Might Be Reliable**

- You can find who wrote it.
- The website ends in .edu, .gov, or .com.
- The source says where it got its information from.

#### **Category 2: Ways a Website Might Not Be Reliable**

- There are lots of spelling or grammar mistakes.
- It doesn't say where the information came from.
- It tries to sell you something more than inform you.

*Students must sort items into their correct categories.*