Task 1: Write your own algorithm

A. Write your own **linear** algorithm for getting ready for school in **five steps**?

1. Wake up and get out of bed.
2. Brush teeth and wash face.
3. Get dressed in school clothes.
4. Eat breakfast.
5. Pack school bag and leave for school. (accept similar responses)



B. Algorithm Writing

Write a simple algorithm for **baking a cake**. List the steps in order:

1. Mix the cake ingredients together in a bowl.
2. Pour the mixture into a cake pan.
3. Put the pan in the oven and bake it.
4. Take the cake out and let it cool down.

Task 2: Create Order from Disorder

A. Given below are some simple algorithms. Their steps are OUT OF ORDER. Your job is to **number the steps from 1,2,3 & 4 in the proper order.**

1. Algorithm for Starting a Computer Assignment

- ☐ 2 Log in to the computer
- ☐ 4 Finish the assignment
- ☐ 3 Open the assignment
- ☐ 1 Turn on the computer

2. Algorithm for Lunchtime Routine

- ☐ 2 Open lunchbox
- ☐ 4 sandwich
- ☐ 3 Take out sandwich
- ☐ 1 Sit down at lunch table

3. Algorithm for Pouring a Drink

- ☐ 3 Pour juice into the cup
- ☐ 2 Open the juice bottle
- ☐ 4 Drink the juice
- ☐ 1 Get a cup from the cupboard

B. Fill in the blanks with the appropriate words from the box below. Not all words will be used.

algorithm	loop	steps	repeat	order	indefinite	continuously

1. A/an algorithm is a list of instructions that tells you how to do something step by step.
2. A ___loop___ is when you do the same thing over and over again.
3. If instructions are out of order the task will not get done correctly.
4. The forever loop runs ___continuously___ without stopping.
5. You can use a loop when you need to ___repeat___ an action many times.
6. Another name for a forever loop is an ___indefinite___ loop.

Task 3: Q & A – Algorithms & Loops

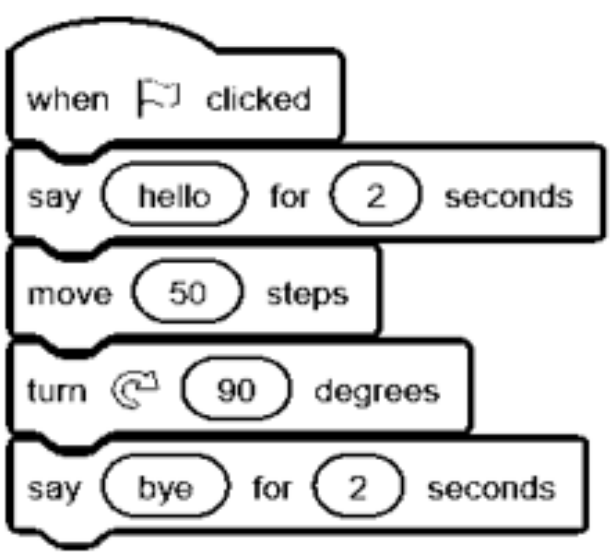
1. What is the difference between a **linear algorithm** and a **looping algorithm**?

A **linear algorithm** is a list of steps that you follow one after another, in order, from start to finish — no repeats, no choices.
A **looping algorithm repeats** one or more steps **again and again** until the task is finished or stopped.

2. Write any **3 daily life activities** that use algorithms.

- Brushing your teeth.
- Making a cup of tea.
- Getting ready for school.

3. Look at the Scratch code below. Is it a Linear Algorithm or does it have loops? Why?



It is a Linear Algorithm because it follows the steps one by one and does not repeat any instructions.

4. **Write answers of the following questions:**

a. What is the difference between a repeat loop and a Forever Loop?

Repeat Loop	Forever Loop
Repeats an action a **set number of times and has a clear stopping point.** Used when you know how many times. Example: Repeat 5 times.	Repeats an action **without stopping and has no stopping condition** unless forced. Used when you don't know how to stop. Example: keep blinking forever.

b. What is an **indefinite loop**?

An **indefinite loop** is a type of loop that **repeats an action**

an unknown number of times. It continues **until a**

certain condition is met.

Example:

"Keep calling your friend until they answer."

You don't know how many times you'll

have to call, that's an **indefinite loop.**



Task 4: Match the Terms – Find the Stopping Conditions

Draw a line to match each **action** with the **correct stopping condition** for the action.

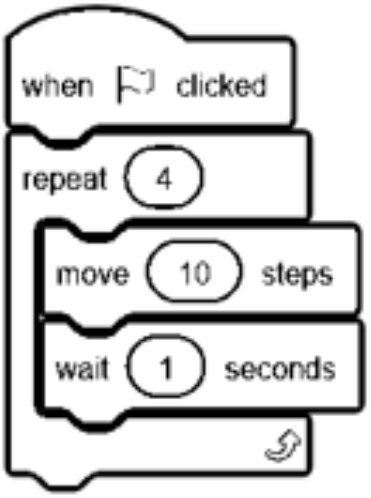
Actions	Conditions
1. Keep brushing your teeth	until your friend answers
2. Keep calling your friend	until you reach the park
3. Keep playing the game	until the timer goes off
4. Keep walking	until your teeth are clean





Task 5: Understand the Code

1. Look at this Scratch code:



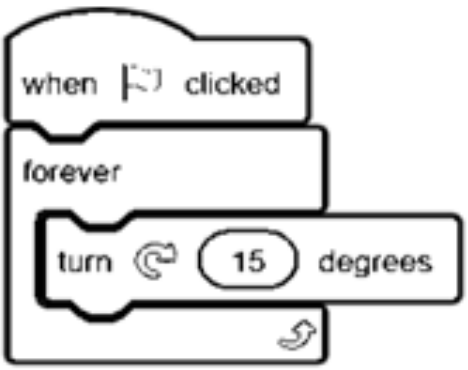


How many steps will the sprite take?

The sprite will **move forward 10 steps** and **repeat that 4 times.**

It pauses for **1 second** after each move (4 seconds total), ending up moving a total of **40 steps over 4 seconds.**

2. Look at this **Scratch** code:



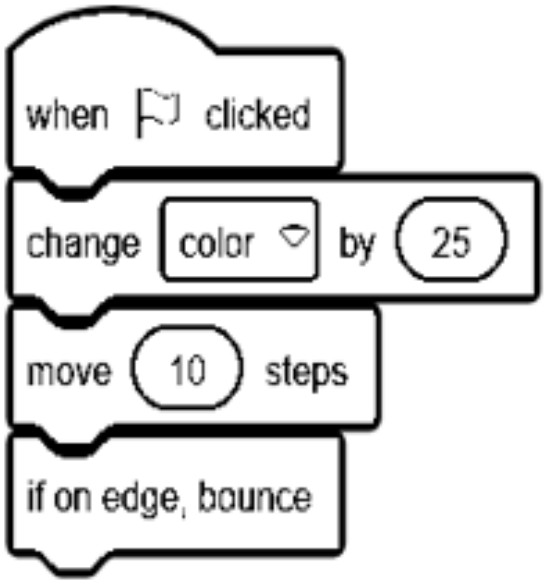
What will happen when the **green flag** is clicked?

The script uses a **forever loop**, so the sprite keeps turning **15 degrees** over and over.

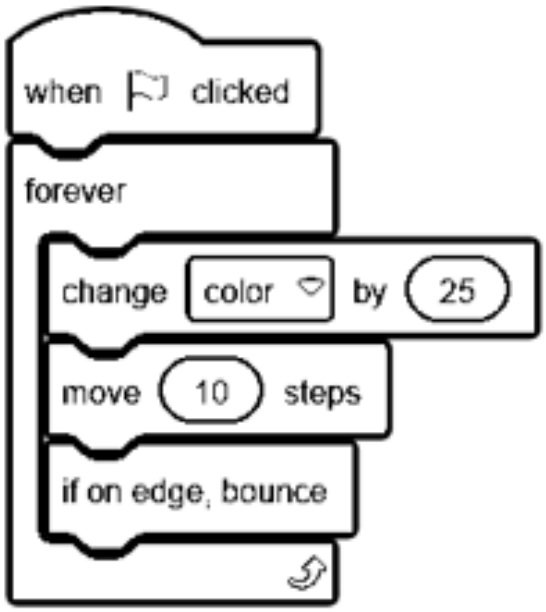
There is **no stopping condition**, so the sprite will **spin in circles endlessly** until the program is manually stopped.

3. Look at these two different programs and answer the questions

Program 1



Program 2



a. What extra code is there in **Program 2**?

The extra code is a **forever** block

b. What does the extra code do in **Program 2**?

The forever block makes the **sprite change its color effect** each time the loop runs. So each time the sprite moves or bounces 10 steps, it also **visually changes colors**, creating a colorful animation effect.

c. What will each program do when the **green flag** is clicked?
Read the given statements and write the correct Program Number (1 or 2).

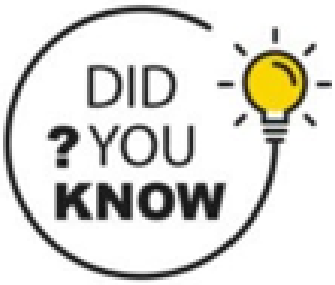
Program 2_____: When green flag is clicked, the sprite will change color effect by 25, and move on stage, bounce when it hits an edge. This will go on continuously.

Program 1____: When green flag is clicked, the sprite will change color effect by 25, move 10 steps forward and bounce when it hits an edge. This program will run once only.

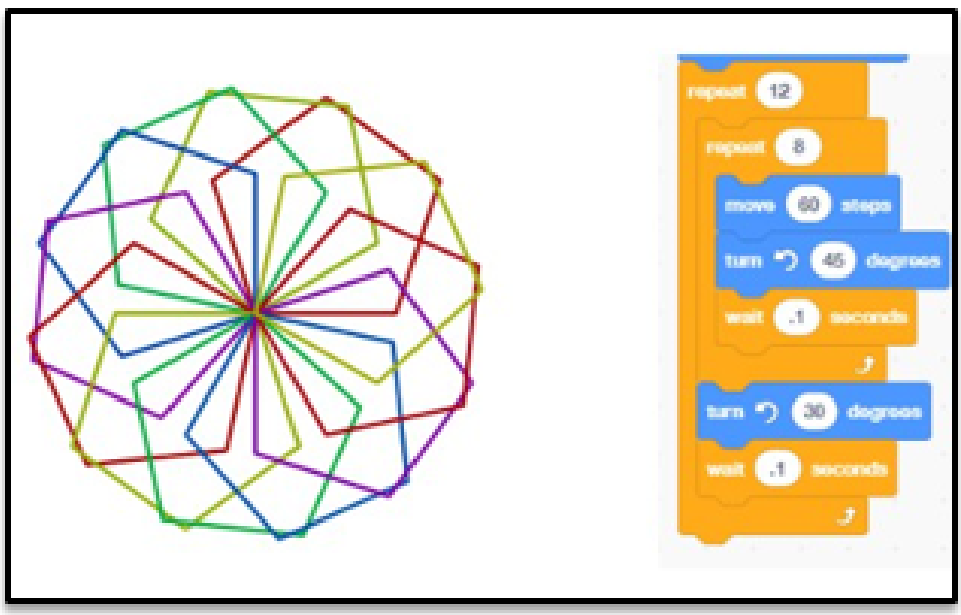
Task 6: Match the columns

Draw a line to match each **term** with the **correct sentence**

Column A	Column B
Algorithm	Step-by-step instructions to do a task
Repeat loop	Repeats a fixed number of times
Forever loop	Repeats indefinitely
Repeat Until loop	Repeats until a condition becomes true



You can make beautiful patterns in Scratch using Repeat Loops!



Task 9: Direct the Robot

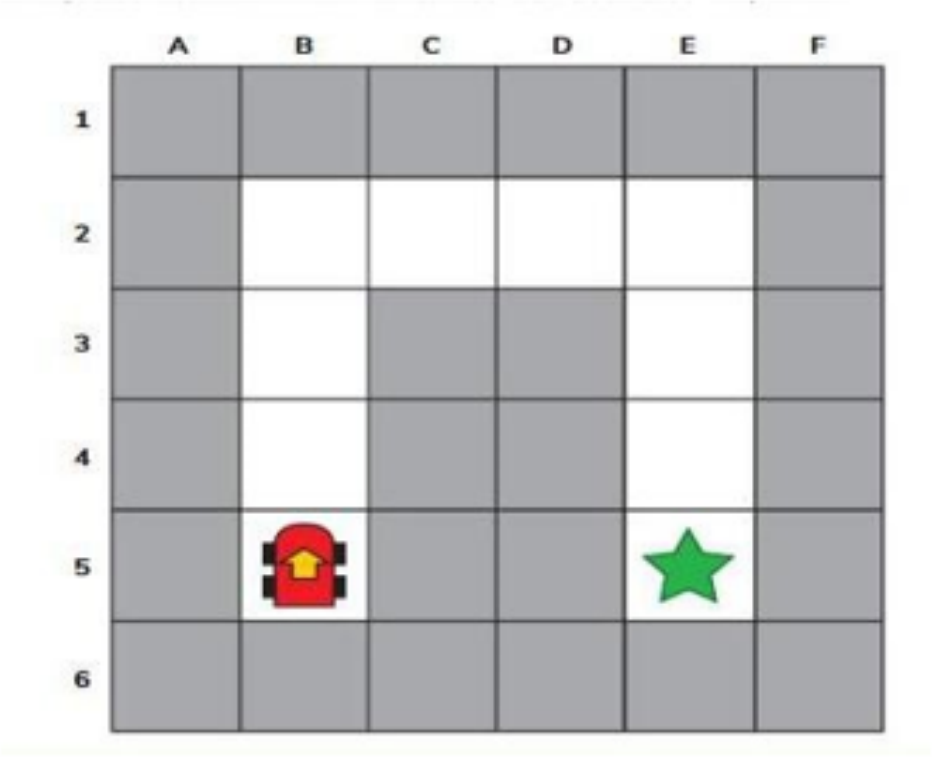
Write an algorithm to direct the robot in square **B5** to the star in square **E5**, following the white road.

Use commands like these to write your instructions:

Forward 3 (to move forward 3 squares)

Turn right

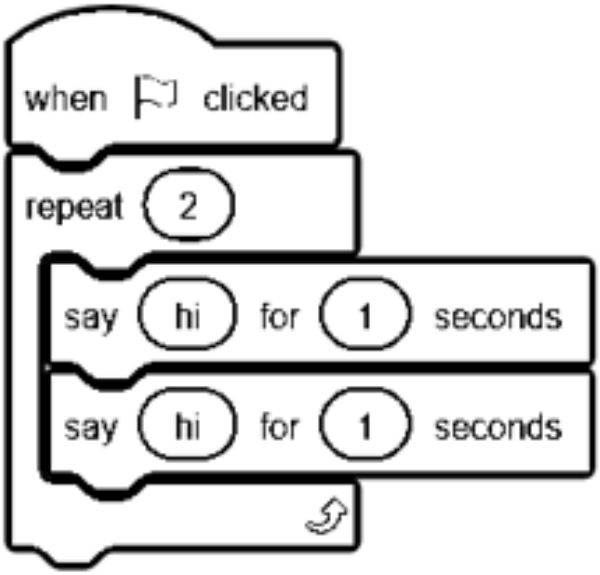
When moving, you should not count the square the robot is currently on. For example, the command **'Forward 3'** will move the robot to square **B2**.



Algorithm:
1. **Forward 3** *(Robot moves from B5 → B2)*
2. **Turn right** *(Now facing right →)*
3. **Forward 3** *(Robot moves from B2 → E2)*
4. **Turn right** *(Now facing down ↓)*
5. **Forward 3** (Robot moves from E2 → *E5* — the star!)

Task 10: Debug the code

Look at the code below. It's supposed to make the sprite say "Hi!" 4 times, but something is wrong. Fix it! Also try out this task yourself on Scratch.



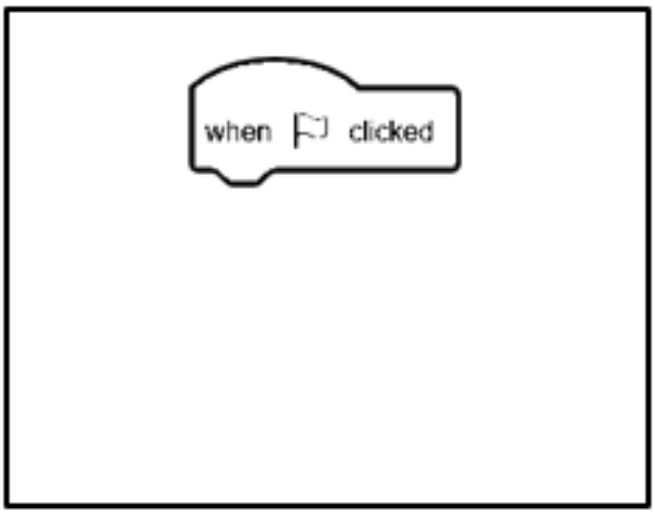
Corrected version:

When green flag clicked

repeat 4

say hi for 1 seconds

Write a Scratch script that makes a sprite move 10 steps, 6 times. Plan out your script below. What will you choose to add?



repeat 6

move 10 steps

Task 12: Test Your Knowledge

Circle the correct answer:

1. What does a **count-controlled loop** do?

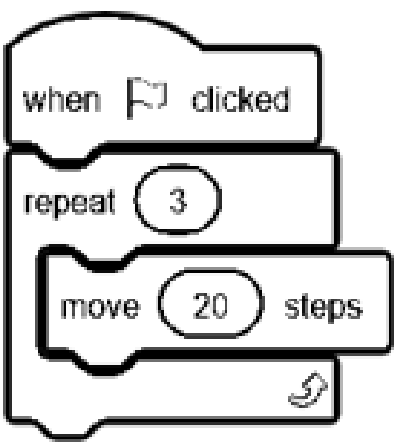
   a) Stops the code
   b) Repeats forever
   c) Repeats a fixed number of times
   d) Makes the sprite disappear.

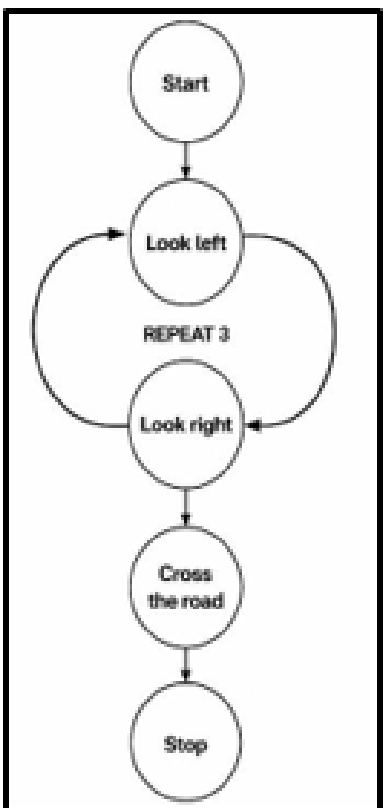
2. What is the name of the count-controlled loop block in Scratch?

   a) forever
   b) repeat
   c) wait
   d) if

3. What will this code do?

   a) Move forever
   b) Move 3 steps
   c) Move 60 steps
   d) Say "Hello!"





Task 15: Think and Answer

1. What is the difference between input and output?

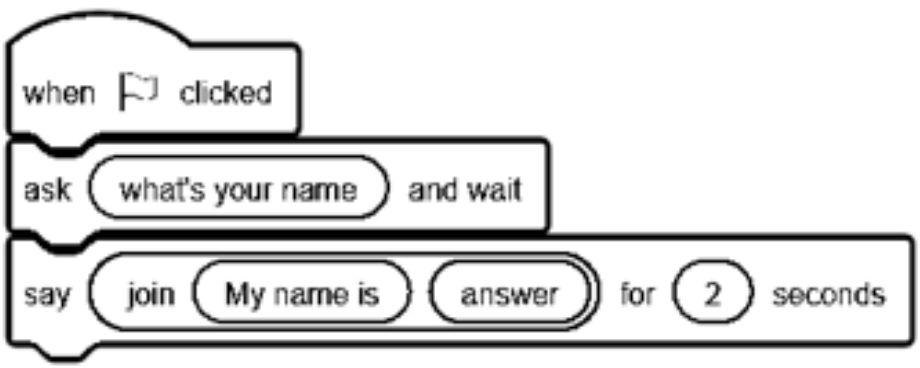
Input is **information or data received** by a system or program. It's what you put **in** to tell the computer what to do.
Examples: typing on a keyboard, clicking a mouse, or sensors detecting light.

Output is **information or data sent out** from a system or program. It's what the computer gives **back** after processing the input.
Examples: displaying text on the screen, printing a document, or playing a sound.

2. Name one Scratch block that gives output:
   Say Hello! for 2 seconds
   This block makes the sprite **show a speech bubble** with the message **"Hello"**. It's an output because it displays information to the user.
   (accept relevant responses for both Questions 1 and 2)

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3. What will this code do?

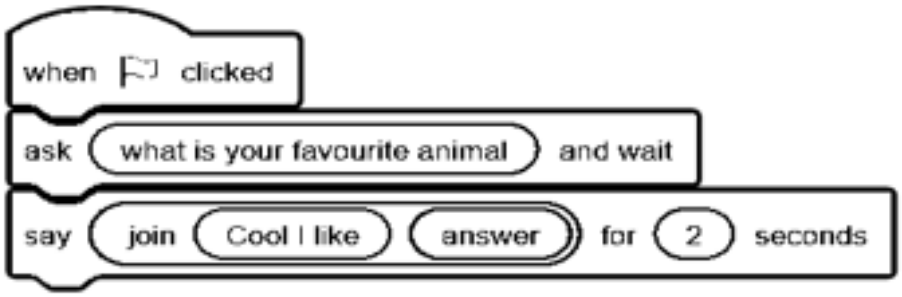


The **ask** block takes input from the user (input).

The **say join** block outputs a message combining the text **"My name is"** with the user's **answer**.

The message will appear as a speech bubble for 2 seconds.

4. What will the sprite will say if you type "panda"?



If you type **“panda”**, the sprite will say:

“Cool I like panda” for 2 seconds.

The join block combines the text **"Cool I like"** with your answer **"panda"**, and the sprite shows that message.

Task 16: Identify the Block Type

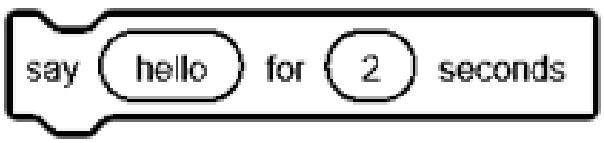
Identify each Scratch block shown below:



Event block



Sensing block



Look block



Operators



Sensing block

Task 1: Spot the Incorrect One!

A. For each question below **three options are correct and one is incorrect.** Identify the incorrect option with a cross (×) in the appropriate box.

1. What is a server?
   - ☐ A part of a network that sends websites to users
   - ☐ A computer that stores and shares information
   - ☒ A person who plays games
   - ☐ A computer that gives data to clients

2. What is a client?
   - ☐ A laptop using the internet
   - ☐ Your phone when you browse the web
   - ☐ A computer that asks for information from a server
   - ☒ A printer that is printing paper

3. Which of these is an example of a client?
   - ☒ A hard disk
   - ☐ Your school computer that opens a website
   - ☐ A phone streaming music
   - ☐ A tablet watching videos online

4. What does a client do?
   - ☐ Connects to the internet to get data
   - ☒ Sends Websites and Web Pages when requested
   - ☐ Opens websites using a browser
   - ☐ Asks for and shows information

5. When you use a browser like Chrome, your computer is acting as a:
   - ☐ Client
   - ☐ Part of a client-server model
   - ☒ Printer
   - ☐ Device that requests website data

6. What does a server do when a client asks for a website?
   - ☐ Shares stored data like videos or files
   - ☐ Responds to the client's request
   - ☒ Shuts down
   - ☐ Sends the website data to the client

7. Which device is usually a server?
   - ☐ A large computer that stores websites
   - ☐ A data center computer
   - ☒ A microwave
   - ☐ A company's main file storage system on the internet



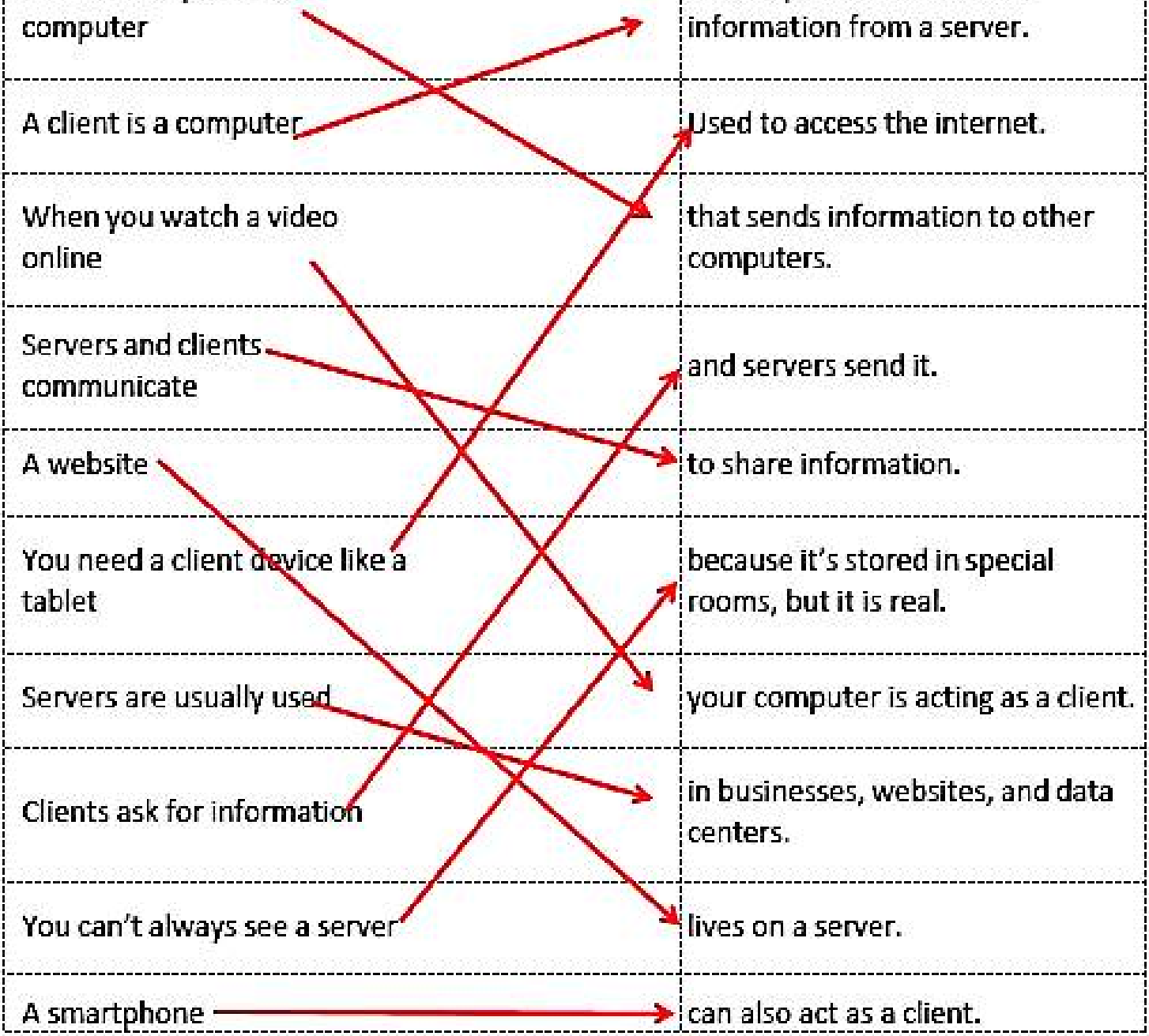
8. Can one server help many clients at the same time?
   - ☐ Yes
   - ☒ Only one per day
   - ☐ Servers can handle many users at once
   - ☐ It shares data with multiple devices

9. What is needed for a client and server to talk to each other?
   - ☐ A Wi-Fi or data connection
   - ☐ A network or the internet
   - ☒ A printer
   - ☐ Communication through web protocols

10. When your tablet opens a YouTube video, the video comes from the _____
   - ☒ Keyboard
   - ☐ Server
   - ☐ A remote computer with the video file
   - ☐ YouTube's storage system

B. Match the statements in Column A with the Correct endings in Column B.

Column A	Column B
A server is a powerful computer	that requests and receives information from a server.
A client is a computer	Used to access the internet.
When you watch a video online	that sends information to other computers.
Servers and clients communicate	and servers send it.
A website	to share information.
You need a client device like a tablet	because it's stored in special rooms, but it is real.
Servers are usually used	your computer is acting as a client.
Clients ask for information	in businesses, websites, and data centers.
You can't always see a server	lives on a server.
A smartphone	can also act as a client.



Task 2: Q & A - Clients & Servers

Answer the following questions:

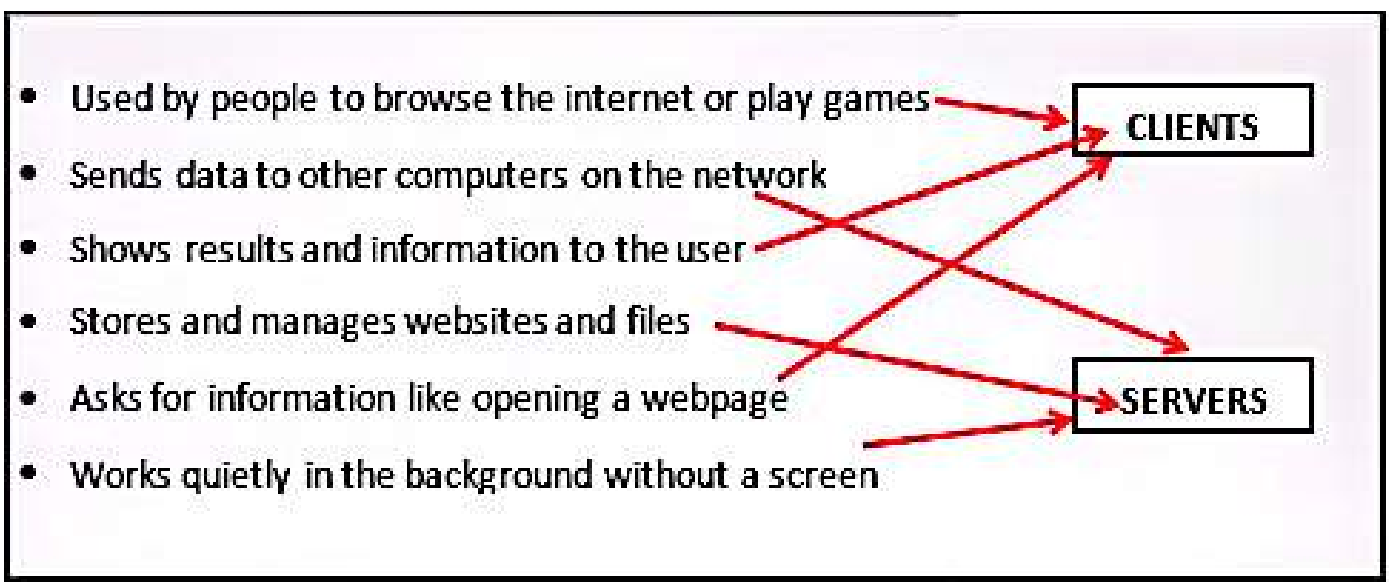
1. 1. What files or programs which you usually use are stored on servers? Google Docs, Slides, or Sheets (stored on Google's servers).
2. Websites like YouTube.
3. Microsoft 365 or OneDrive files.
4. School files stored on a shared drive (like a network folder or Google Classroom).
5. Online games or apps that load from the internet.
   (accept similar relevant responses...max 3 required)

2. Think about your computer network in school. What services do you think it gives you when you log in on a computer?
   - Access to your personal files or folders.
- Shared folders for your class or teachers.
- Internet access for browsing and research.
- Printing documents from any computer.
- Access to learning platforms (like Google Classroom or Microsoft Teams).
- Secure login to protect your information**(accept similar relevant responses...max 3 required)**

3. Which of the services from among the following can a server provide to a client? Choose any **three**.

- ✓ Saving and sharing files
- ✓ Printing documents from anywhere in the network
- ☐ Making video calls with friends
- ✓ Sending websites to a browser
- ☐ Playing music loudly in the classroom

4. Read the following statements and decide which they are most suited to - Clients or Servers? Match each statement to the correct option.



Task 3: Choose What's Correct - Internet and World Wide Web

A. Circle the correct option from each of the following:

1. Which of the following is used to connect computers in a network?
   - ☐ Pencil
   - ☐ Mouse
   - ✓ Cable or Wi-Fi
   - ☐ Eraser

2. Which device can connect to the Internet?
   - ☐ A chair
   - ✓ A smart television
   - ☐ A spoon
   - ☐ A soccer ball

3. Where are wired connections often used?
   - ☐ In space
   - ☐ Under water
   - ✓ In homes and schools for stable Internet
   - ☐ On a soccer field

4. What is a web page?
   - ☐ A page in a notebook
   - ☐ A kind of food
   - ✓ A document on the World Wide Web
   - ☐ A toy

5. Which device uses a wireless connection?
   - ☐ Wired mouse
   - ✓ Bluetooth headphones
   - ☐ Plugged-in printer
   - ☐ Toaster

6. What is a computer network?
- ☐ A group of animals playing games
- ✓ A group of computers connected to share information
- ☐ A single computer doing homework
- ☐ A book about computers

7. What should you NOT share on the Internet?
- ☐ Your favorite color
- ☐ Your name
- ☐ Your school projects
- ✓ Your home address and password

8. What is one benefit of a wired connection?
- ☐ It makes food taste better
- ☐ It gives slower Internet
- ✓ It is usually more stable and faster than wireless
- ☐ It only works at night

9. What do you use to explore the World Wide Web?
- ☐ A book
- ☐ A bicycle
- ✓ A web browser (like Chrome or Firefox)
- ☐ A calculator

10. What does Wi-Fi help you do?
- ☐ Watch TV without a remote
- ☐ Ride a bike
- ✓ Connect to the Internet without wires
- ☐ Draw on paper

B. Identify the following as **TRUE** or **FALSE**:

No	Statement	True/ False
1	The Internet and the World Wide Web are the same thing.	False
2	A web browser is used to visit websites.	True
3	Google Chrome and Mozilla Firefox are examples of web browsers.	True
4	A web page is a printed paper with information.	False
5	You can find pictures, videos, and text on a web page.	True
6	Wi-Fi is needed to connect to the Internet wirelessly.	True
7	You can use the World Wide Web without an Internet connection.	False
8	Web browsers help you search and view web pages.	True
9	The World Wide Web is full of games, videos, and information.	True
10	Typing www.google.com in a browser takes you to a website.	True

Task 5: Choose the Correct Answer – Wi-Fi and Ethernet

A. Circle the correct options from the following:

1. What is Wi-Fi used for? a) Making phone calls b) Sending letters by mail c) Connecting to the Internet without wires d) Playing board games	**2.** What is an Ethernet cable used for? a) Charging your phone b) Listening to music c) Turning on the lights d) Connecting to the Internet with wires
3. Which connection is wireless a) Ethernet b) Telephone wire c) Wi-Fi d) Power cord	**4.** Which is usually faster and more stable? a) Wi-Fi b) Ethernet c) Bluetooth d) Radio
5. Which connection lets you move around without unplugging anything? a) Ethernet b) Wi-Fi c) Telephone line d) USB cable	**6.** Where do you plug in an Ethernet cable? a) Into a plant b) Into a speaker c) Into a computer or router d) Into a light switch
7. What does Wi-Fi use to send data? a) Water waves b) Radio waves c) String d) Air balloons	**8.** If your Wi-Fi stops working, what might still connect you to the Internet? a) A cookie b) An Ethernet cable c) A fan d) A flashlight

B. The following statements are ALL FALSE. The false part is made bold and underlined. Correct each statement and write it in the table provided below:

1. Wi-Fi lets you connect to the Internet ***with wires***.
2. Ethernet uses a ***wireless*** connection to connect to the Internet.
3. Wi-Fi works when your computer is ***plugged into a cable***.
4. You can walk around with your tablet while using ***Ethernet***.
5. Ethernet is a kind of ***wireless*** connection.
6. Wi-Fi is ***always faster*** than Ethernet.
7. You **can** plug an Ethernet cable into your *backpack*.
8. ***Only Wi-Fi*** is used to connect to the Internet.

CORRECTIONS
1. Wi-Fi lets you connect to the Internet **without wires.**
2. Ethernet uses **a wired connection** to connect to the Internet.
3. Wi-Fi works **without needing to plug into a cable.** (and similar responses)
4. You can walk around with your tablet while using **Wi-Fi.**
5. Ethernet is a kind of **wired connection.**
6. Wi-fi is slower than ethernet
7. You cannot plug an Ethernet cable into your backpack.
8. **Wi-Fi and Ethernet** are both used to connect to the Internet.

Task 6: Q & A - Wi-Fi and Ethernet

1. What happens if one connection in a network breaks?

Other devices may still stay connected if there are **multiple paths**, but some services or devices might stop working temporarily.

2. What happens if **all** connections in a network break?

The **entire network will stop working**—no internet, no shared files, no communication between devices.

3. What happens if lots of people try to use the internet at the same time?

The **network may slow down** because the **bandwidth is shared**, leading to buffering, lag, or delays.

4. Name at least **two benefits** of connecting to a network wirelessly?

   a. You can **move around freely** without being plugged in.

   b. It's **easier to connect multiple devices** (like phones, tablets, laptops).

   (accept similar responses that are valid for wireless connections)

5. What are the benefits of connecting to a network using an Ethernet cable? Name at least **two**.

   a. It is usually **faster** than Wi-Fi.

   b. It provides a **more stable and reliable** connection.

6. What is the main difference between Wi-Fi and Ethernet?

Wi-Fi is a **wireless connection** to a network, while **Ethernet** uses **wires/cables** to connect devices directly.

Task 7: Objectives (Network Security, Network Failure)

A. Circle the correct option from each of the following:

1. **What is the main job of network security?**
   a) To make food
   b) To play music
   c) To keep computers and information safe
   d) To turn off the Internet

2. **Which of the following helps protect a network?**
   a) A soccer ball
   b) A firewall
   c) A cookie
   d) A backpack

3. **What is a network failure?**
   a) When the Internet works faster
   b) When the network stops working or goes down
   c) When you finish your homework
   d) When you close a book

4. **What can cause a network failure?**
   a) Strong Internet signal
   b) A thunderstorm or broken cable
   c) Reading a book
   d) Turning on the lights

5. **What should you NEVER share to stay safe on a network?**
   a) Your favorite color
   b) Your pet's name
   c) Your password
   d) Your favorite subject

6. **What does an antivirus program do?**
   a) Plays games
   b) Protects the computer from viruses and threats
   c) Turns off the screen
   d) Makes the Internet faster

7. **What might happen if the network fails at school?**
   a) Students get more homework
   b) Computers can't connect to the Internet
   c) The teacher plays music
   d) The lights go out

B. Identify the following as **TRUE** or **FALSE**:

Statement	True/ False
1. Network security helps keep computers and information safe.	True
2. You should always share your password with your friends.	False
3. A firewall can help protect a computer network.	True
4. Antivirus programs are used to decorate your computer.	False
5. Network security keeps hackers and bad software away.	True
6. Network failure means the Internet is working perfectly.	False
7. If there is a network failure, you may not be able to open websites.	True
8. A broken cable or power cut can cause a network to stop working.	True
9. Network failures are always caused by playing too many games.	False
10. Network failure can happen at school, home, or anywhere with Internet.	True

Task 8: Q & A (Topic Network Security, Network Failure)

1. What do you think would happen if a small network failed in an office?

If a small network failed in an office, people may not be able to do their work properly until the network is fixed. There are problems occurred such as files are not shared, communication gap, work gets slow down.

(Treat 'what do you think' type questions as open ended opinion based Qs)

2. **Read the situation below and tick (✓) FIVE correct options that can help protect your files if the network fails.**

Scenario:

You spent hours working on your homework and saving it on the school network. The next morning, you log in to your computer, ready to print it — but something's wrong. A network failure happened overnight. The system won't open your file, and a message says the document is corrupted. All your hard work is gone!

Your teacher asks where your homework is, but you have no way to show it. You feel frustrated, maybe even a little upset. You wonder: "What could I have done to keep my work safe?"

Options:

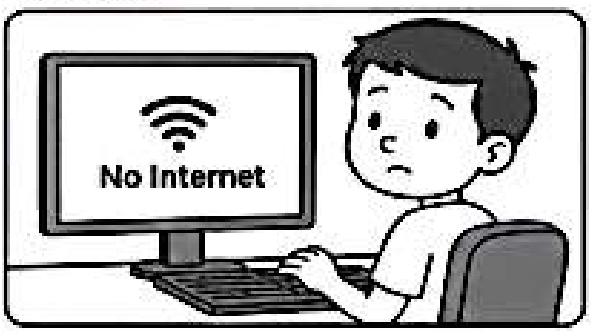
- ✓ Save a copy of your work on a USB drive.
- ☐ Delete the file after completing it.
- ✓ Email the file to yourself.
- ☐ Turn off the computer without saving.
- ✓ Use cloud storage (e.g., Google Drive or OneDrive).
- ✓ Save your work frequently while working.
- ✓ Print a draft copy of important work.
- ☐ Keep only one copy of the file on the school network.

3. Match the Network Failure to Its Cause: Draw a line to match the problem with the correct cause.

Network Problem	Possible Cause
No Internet signal	Power outage
Slow internet speed	Weak signal or too far from the router
Cannot connect to Wi-Fi	The Wi-Fi router is unplugged
Internet not working after a storm	Too many users on the network

4. Look at each picture and guess the cause of network failure. Select the correct option from the ones given.

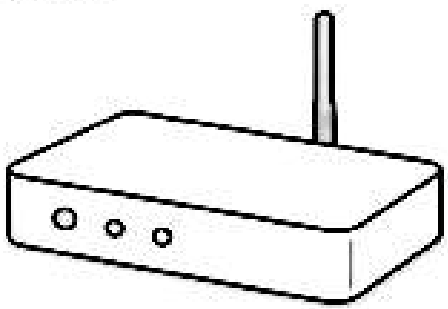
Picture 1



Why do you think the internet is not working?

- ☐ a) The computer is broken
- ☒ b) The Wi-Fi is turned off
- ☐ c) The monitor is dirty

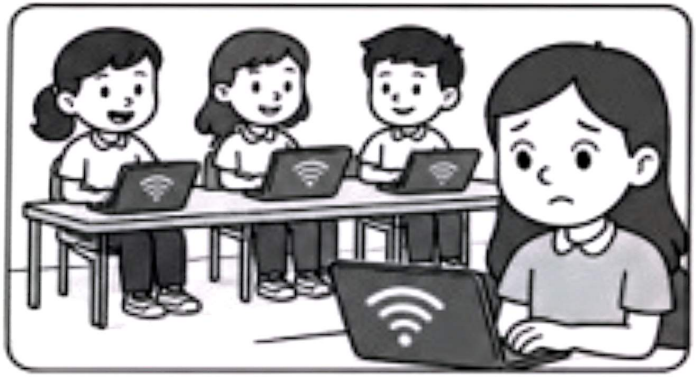
Picture 2



What could be the cause of the network failure?

- ☒ a) The router is unplugged
- ☐ b) Keyboard is not working
- ☐ c) Someone changed the wallpaper

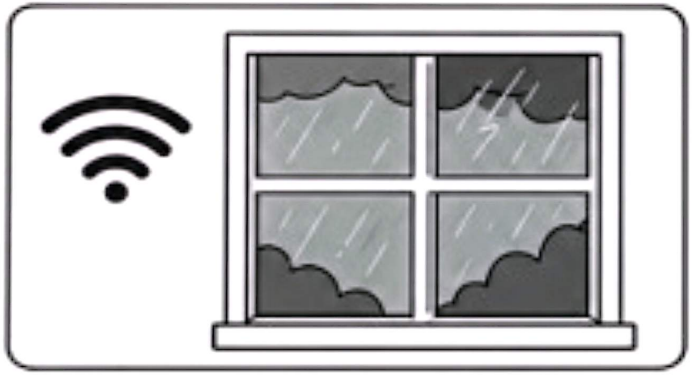
Picture 3



Why is only one student having a network problem?

- [x] a) The tablet is not connected to Wi-Fi
- [ ] b) The student didn't eat lunch
- [ ] c) The desk is too far from board

Picture 4



What might have caused the network failure?

- [x] a) The weather affected the connection
- [ ] b) The windows are open
- [ ] c) The computer is old