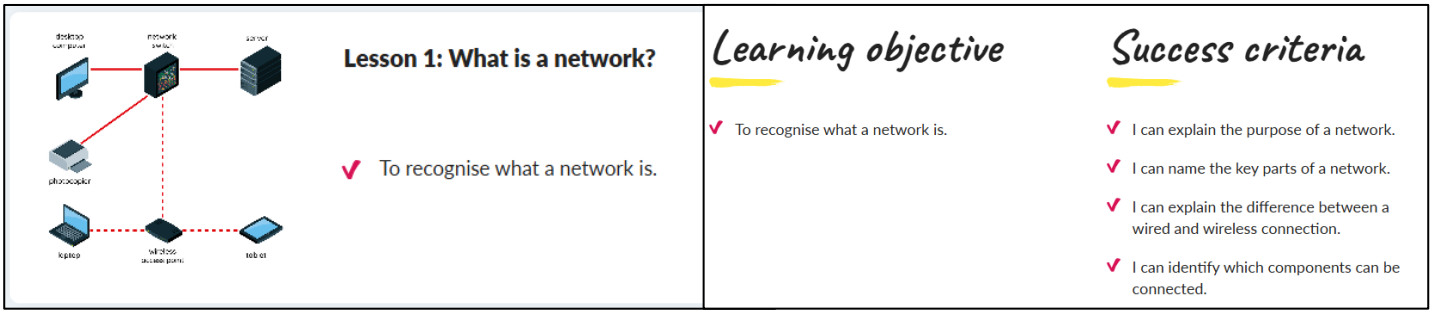
Year 3 – Computing systems and networks 1

Autumn 1



We began by completing an initial knowledge catcher to note down anything that we knew already.

We discussed our favourite devices and why we liked them so much. The most popular choice was a tablet!

We watched a video all about what a network is.

Pupil video: What is a network?

We found out that a network is a group of computers or devices that connect to share information and that a network allows us to make video calls, play games online and search for information.

We spoke about how much networks are used just within our classroom let alone around the rest of the world!

Going on a network safari!

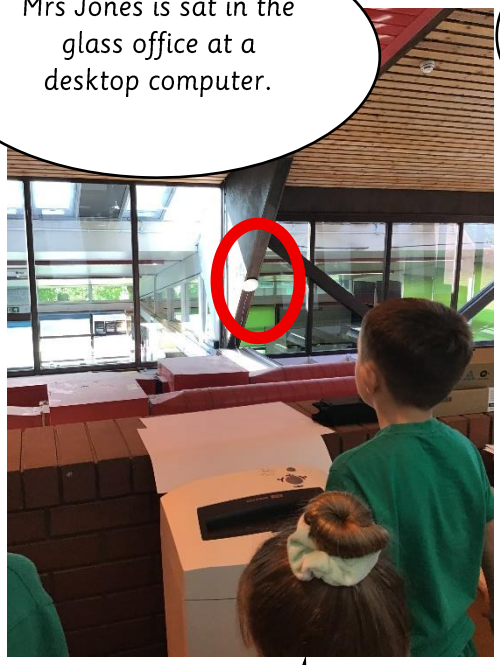
Around the school we went on a network safari!

We found:

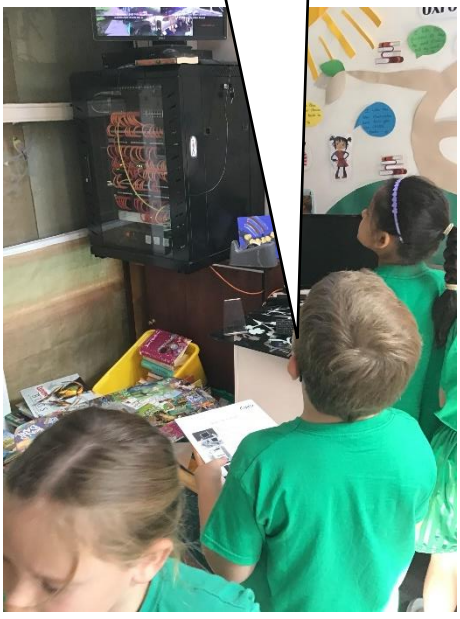
This is a printer and a photocopier that all of the teachers use every day.

You're using a tablet to take these photos! We have lots of those in school.

Mrs Jones is sat in the glass office at a desktop computer.



This looks a little bit like a network switch and a server. I wonder which one it is.



That wireless access point is high up! We can see lots of these around the school.

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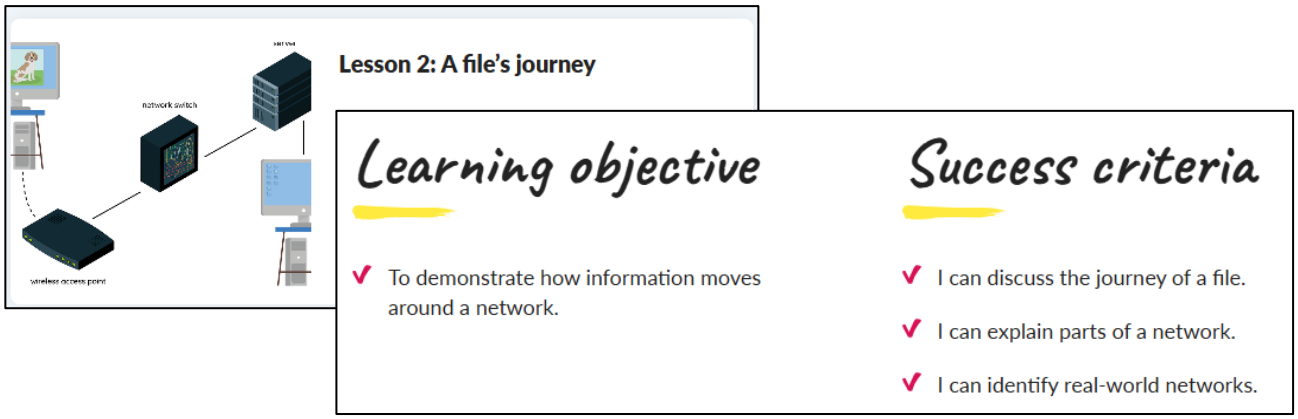
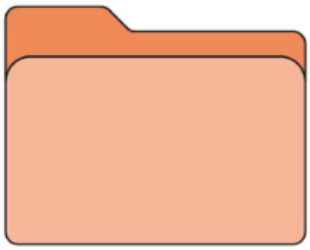


We began the lesson by listening to our new favourite rap all about networks!

Pupil video: The networks rap

What is a file?



We were then asked the question of what a file is.

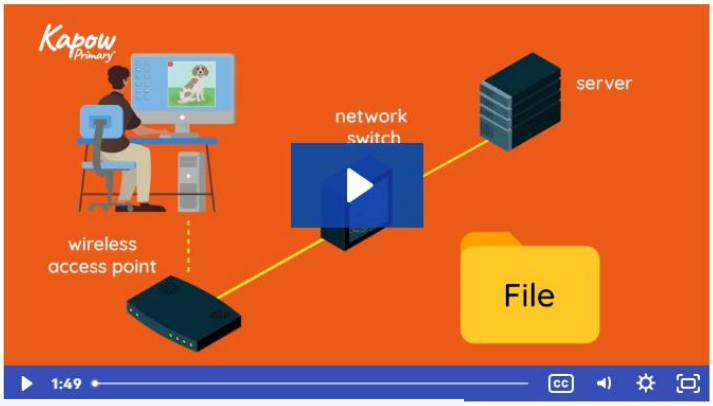
Some children said how it was something saved on a laptop that you can open again.

We found out that it can be a photo, a document or a paper file to keep learning in.

We were told that a file is a collection of data or information stored in a computer or digital device.

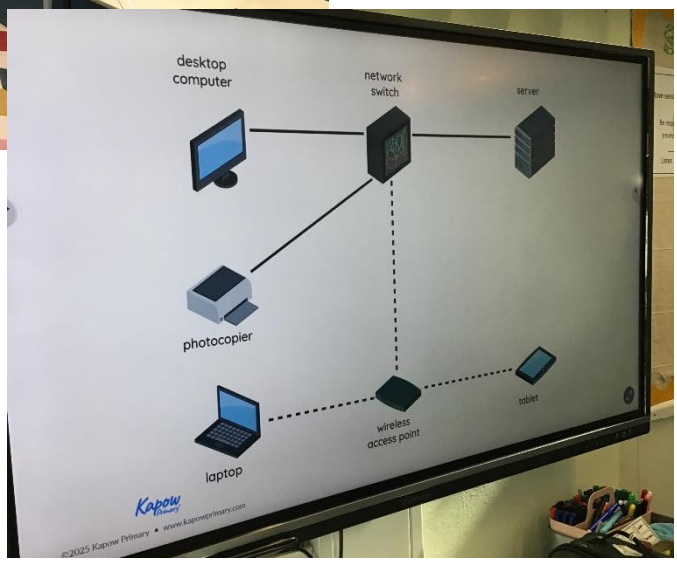
We watched a video all about a file's journey.

Pupil video: A file's journey



- **What happens when you press send?** (The file starts its journey through the network.)
- **What is the device called that checks the file request?** (A server.)
- **What device does a file travel through on a network if using wi-fi?** (A wireless access point.)

We then acted out a file's journey across our school network. We used wool to show the connections within the network and how lots of different devices work together.



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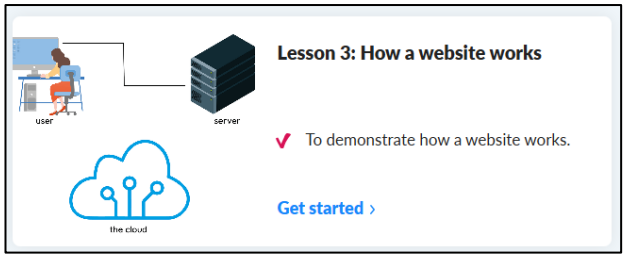
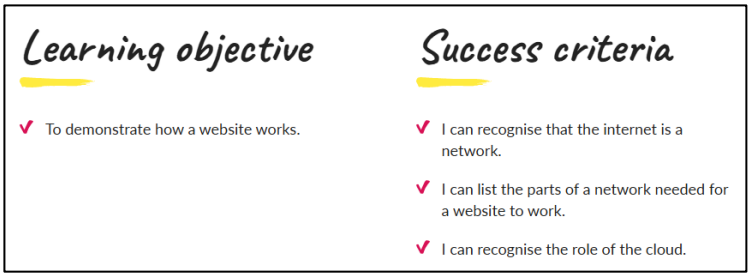
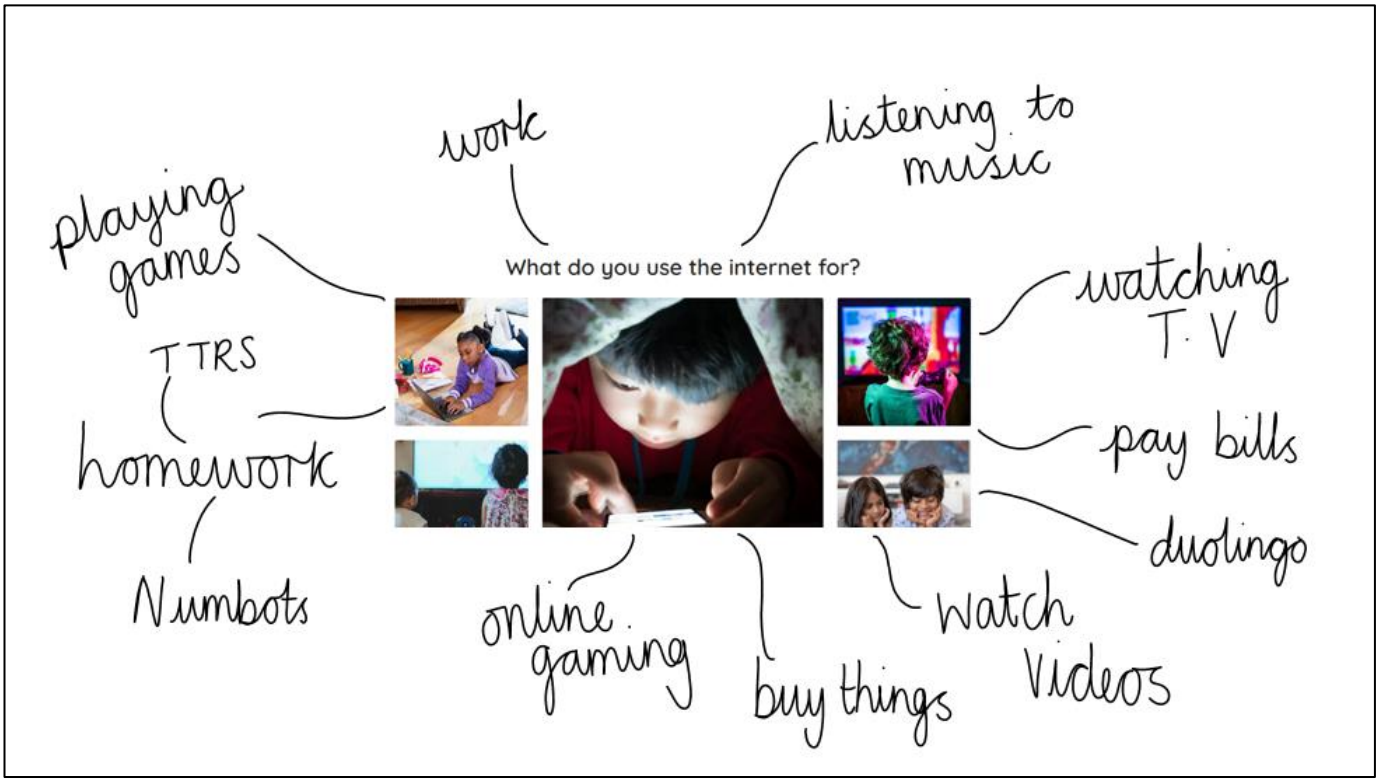




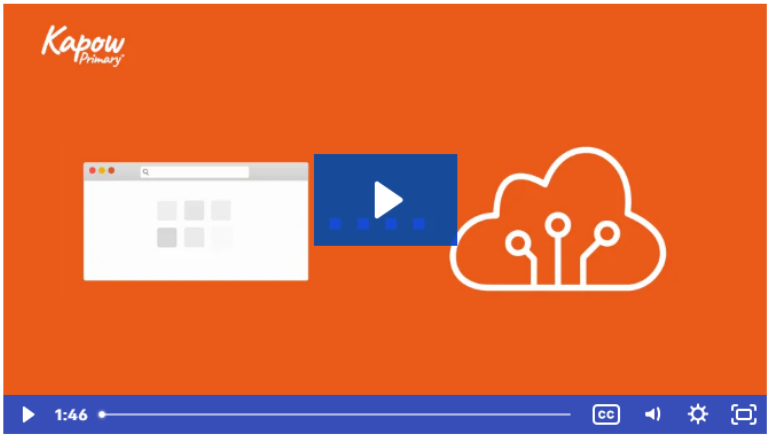
We began our lesson by looking at a variety of different websites on the internet. We were told that a website is a collection of related web pages that can be accessed online. Websites are like an 'online book' where children can read, watch videos or play games.



We were asked to draw/write how we think a website sends data to a computer/tablet. We were told that we were going to add to these later on.

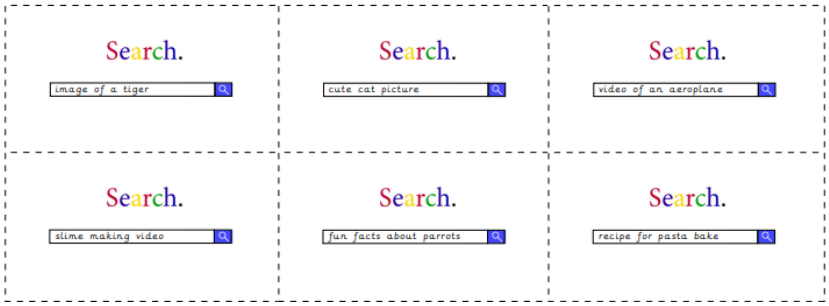
We then found out how a website works by watching a video.

Pupil video: How a website works

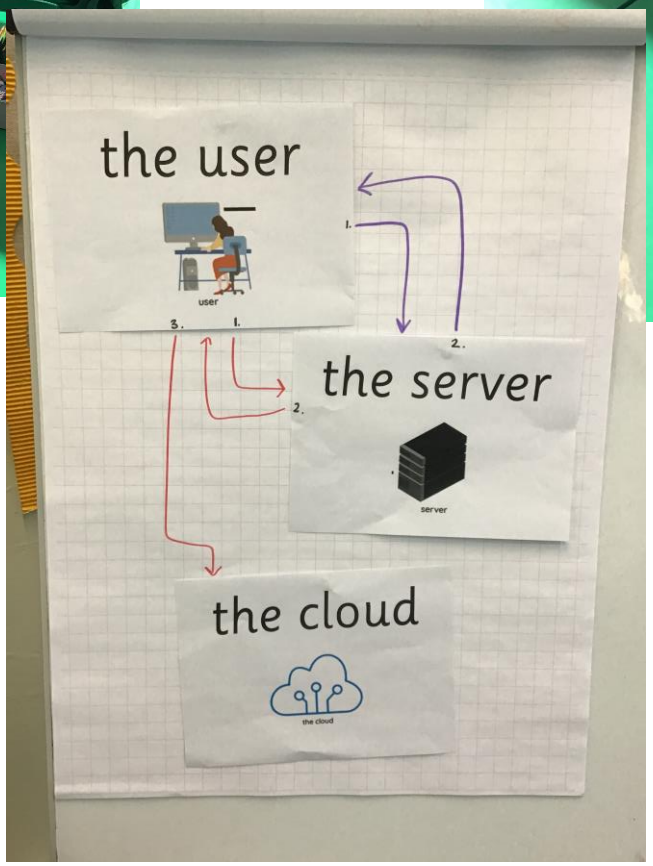


We used the information we had learnt from the video and acted this out.

One table was the user, one was the server and one was the cloud.



We used role play to show how the user would search for something on the internet, so this request would be sent to the server. The server would then find the matching image or file and send this back to the user and sometimes the user would then save these in the cloud.



Following on from what we learnt, we added any new information onto the sheet that we looked at in the beginning.

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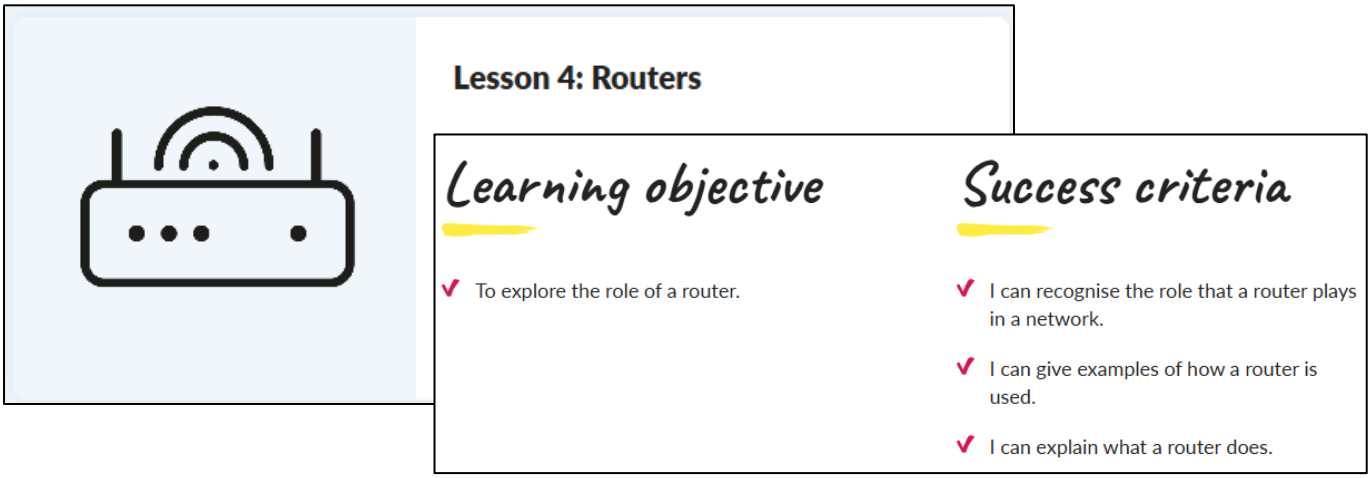


We began by sharing an image of a router and discussing what it could be.

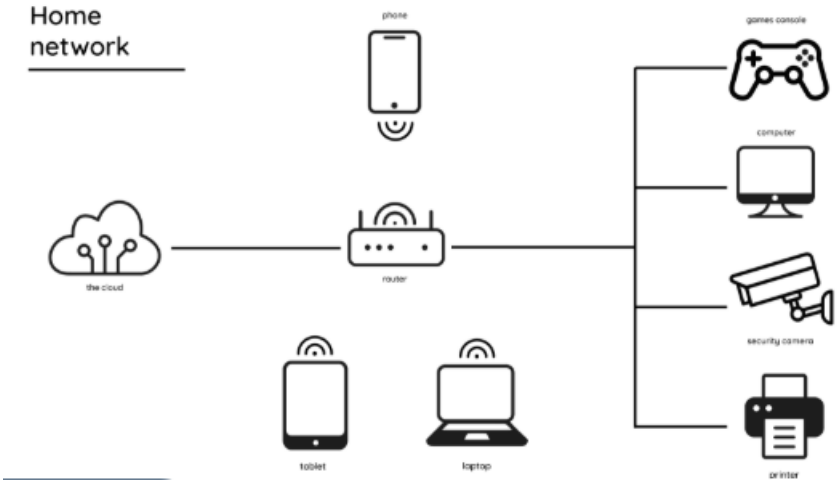
Some children thought it looked similar to their TV box they have in their homes or their 'wifi box'.

We watched a video which explained exactly what a router is.

Pupil video: Routers

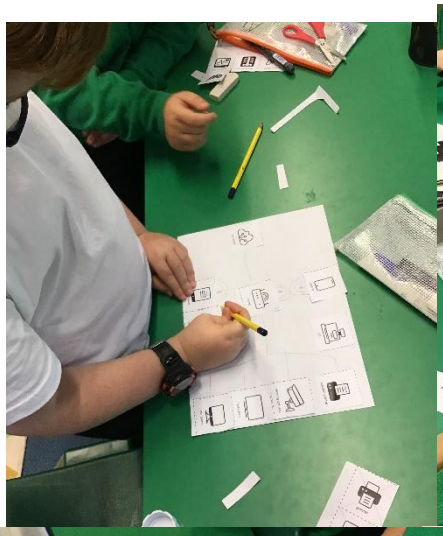
We found out that:

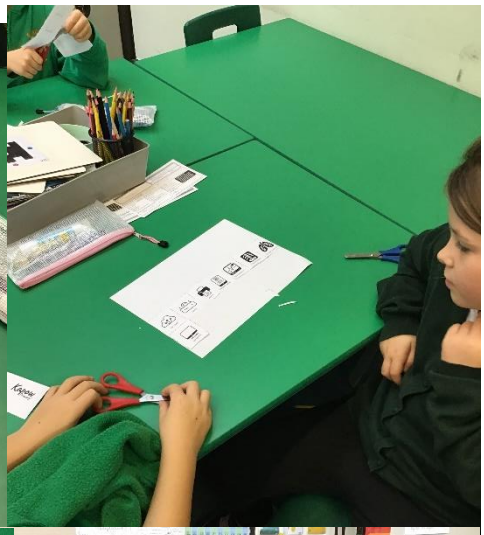
- A router connects lots of different devices together to create a network.
- It can be used to send and receive game data between players in games or sends a video to your device to watch.
- Routers are found in schools, offices, airports and many other places.

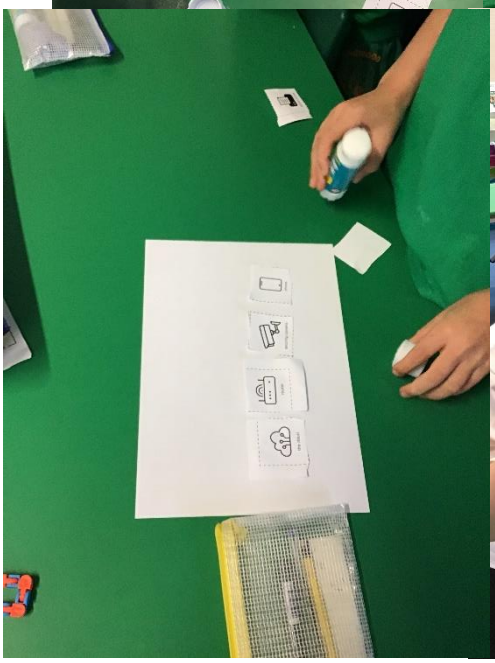


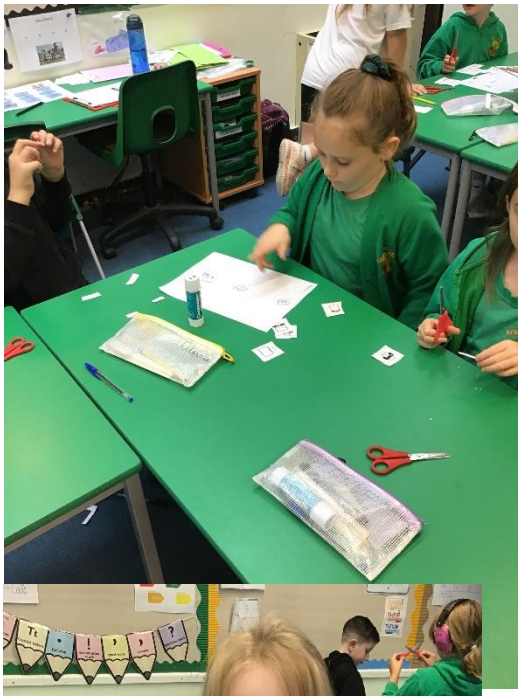
We were shown an example of a home network with different devices being connected to the router and the cloud.

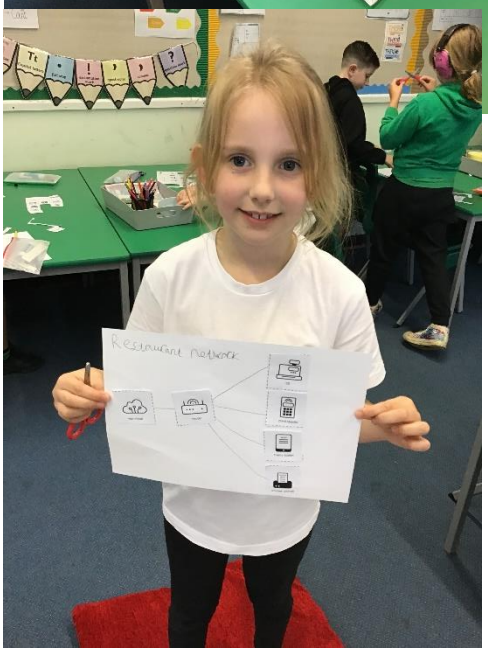
We were challenged to create our own networks showing either a school, a hospital or a restaurant.











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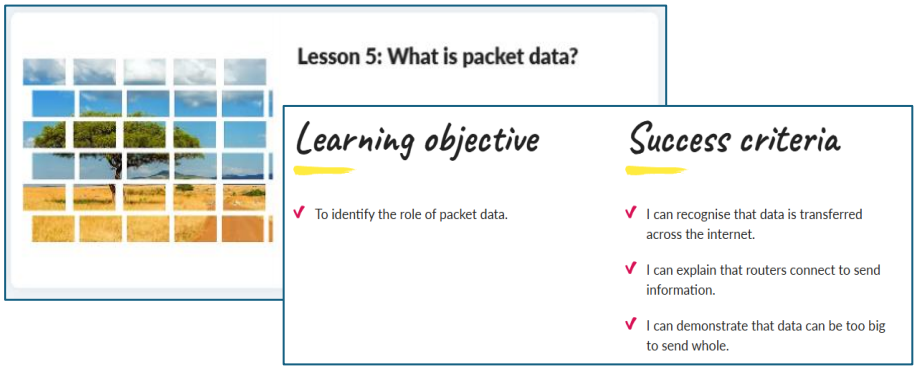
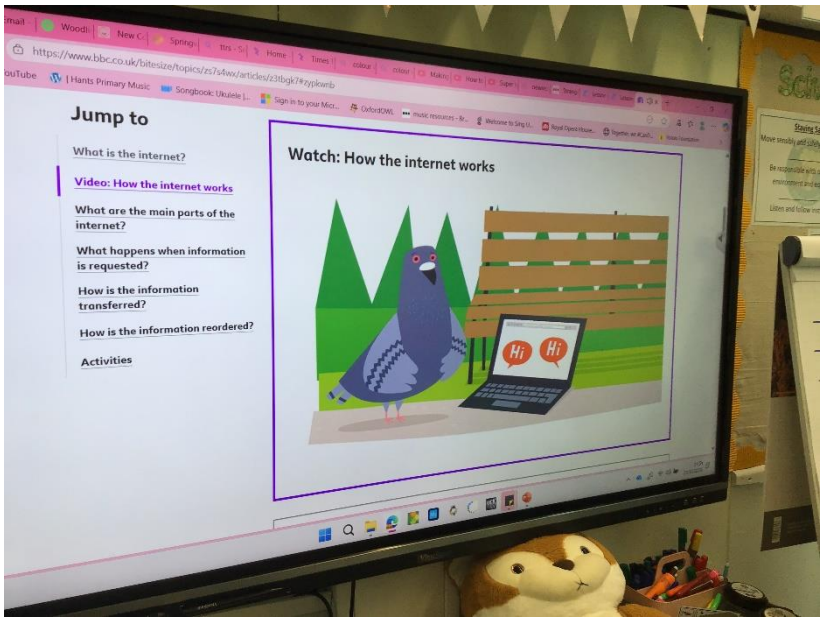


We began our lesson by being given a selection of multilink with the task to build a tower/shape with them. We were told that this represented a file full of data that needs to be sent over the internet.

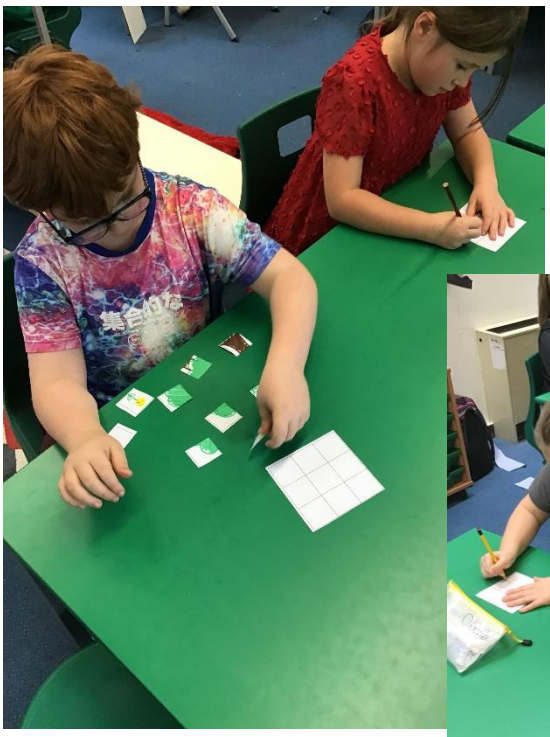
Our teacher explained that this would be too big to send as one file so it would need to be broken down into smaller pieces to reach its destination. We took out structures apart to represent how the file would travel.

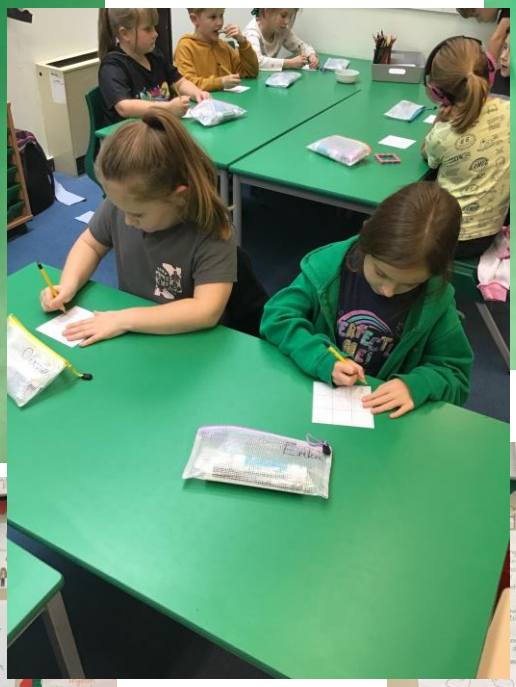


We then watched a video all about the internet which explained how packet data works.

- **What happens when a large file needs to be sent over the internet?** (It is broken into smaller pieces.)
- **What are the small pieces called?** (Packets.)
- **What does each packet include?** (Where it came from, where it is going and how it fits together.)
- **How are the packets guided through the internet?** (Through routers.)
- **What happens when the packets reach their destination?** (They are put back in the right order to make the complete file.)

We were then tasked with completing the packet puzzle challenge. We had to draw an image on a grid, cut it out and then our partner had to reassemble our image, just like a puzzle.





We then discussed…

- **Was the picture assembled correctly?**
- **What strategies or labelling systems were used? Which were the most effective?** (Answers may include: numbers; letters.)
- **How could the process be improved for more accurate or faster reassembly?** (Answers may include: colour coding; clearer instructions.)
- **How is this the same as data over the internet?** (Like the picture, files are broken into packets and then reassembled.)