

A Tech that tracks or senses

Use these if your idea needs to detect, measure or respond to something like the environment, a human body or the location.

Smart devices



Measure things with sensors and use the results to adjust what they do.

Smart thermostats can measure a house's temperature and turn the heating system up or down.

Biometrics



Look at our unique features (like our faces or fingerprints) and respond with an action.

Using your fingerprint to unlock your phone.

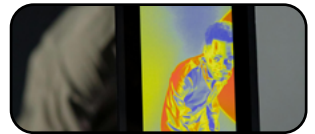
Wearable Tech



Worn on the body to track your health or activity.

Samsung fitness watches can track your steps or heart rate.

Sensors



Pick up changes in the environment like movement, temperature, or light.

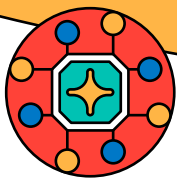
Motion sensors turn on a light when someone passes by.

GPS



Uses satellites to track something's location and tell you where it is.

Car satnavs give us directions.



B Tech you interact with

Use these if your idea involves creating a tool, app or experience people will use directly.



Apps (applications)

Software programs, usually on a phone or tablet, that help the user perform all kinds of tasks, from learning to entertainment.

Some apps help people learn new languages.

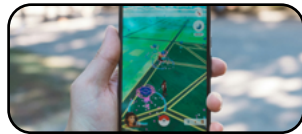


Games

Can be played on a phone, tablet, computer or console, alone or with other people. Can be educational or just for fun!

Some games allow players to build and explore virtual worlds.

Virtual and augmented reality (VR and AR)



VR creates a 'virtual' or fake version of the world that users can explore. **AR** overlays digital content onto real-life settings.

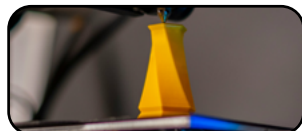
Shoppers can 'try' clothes and glasses before they buy.

Accessories (keyboards, headphones, etc.)



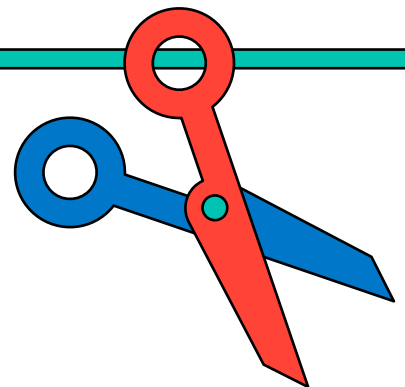
Used with other devices and can make it easier to do things like type or hear.

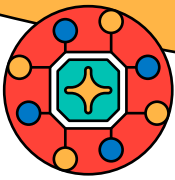
Gamers can use controls and headsets while they play.



3D printers

Print an object, rather than a flat image, using thin plastic threads to build it up.





C Tech that connects

Use this if your idea needs to share data, link devices or work remotely.

Wi-Fi



Allows devices to connect to the internet and each other wirelessly (without using cables).

Using your laptop or tablet to go online at home or in a café.

4G and 5G



Mobile data networks, which let devices connect to the internet without Wi-Fi using cell towers.

Streaming and texting while out and about – 5G will do it faster and more reliably than 4G.

Internet of Things (IoT)



Everyday objects connected to the internet so they can share data or be controlled remotely.

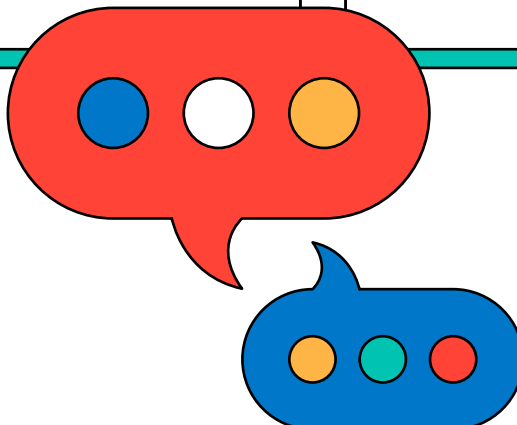
Samsung smart fridges track the use-by date of food to help reduce waste.

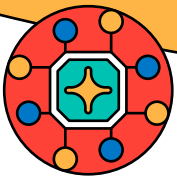
Bluetooth



Connects devices wirelessly over short distances.

Connecting your headphones to your phone.





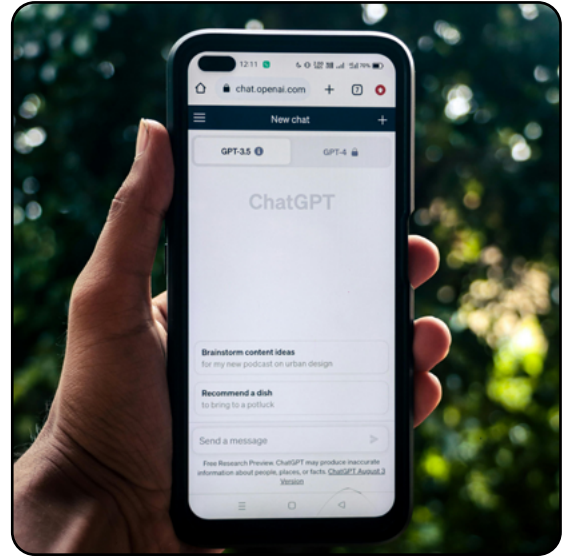
D Tech that 'thinks'

Use AI if your idea needs to make decisions, give advice or personalise something.

Artificial intelligence (AI)

When computers are designed to do things that normally require human thinking: learn, recognise speech or pictures, understand language, and make choices.

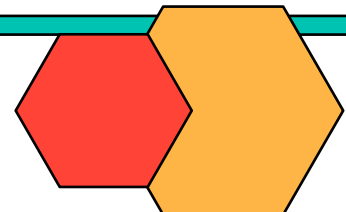
Most AI systems work by spotting patterns in lots of data. Computers are trained on this data and then use it to make predictions or decisions.

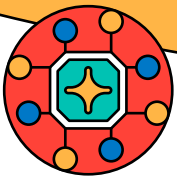


Examples

- **Recommendations:** AI learns what movies you like and suggests similar ones.
- **Safe search engines:** AI filters content so it's safe for children.
- **Chatbots:** AI can check online content and warn you about scams.
- **Self-driving cars:** AI learns to recognise road signs and avoids obstacles.
- **Voice-controlled speakers:** AI responds to spoken commands, like asking it to turn up the volume.

Visit the **Design with AI Power Up** page to learn more about using AI in your entry and beyond.





A Tech that senses



Robotics

Machines that can carry out tasks automatically, often using sensors and AI.

Why use it? To build something that moves, reacts or performs actions.

Real-world use: Used by Samsung robot vacuums to clean floors automatically.

B Tech you interact with



Touchscreens

Displays that respond to touch – allowing users to control devices directly.

Why use it? To make your idea easy and intuitive to use.

Real-world use: Used by Samsung smartphones to let you tap and swipe.

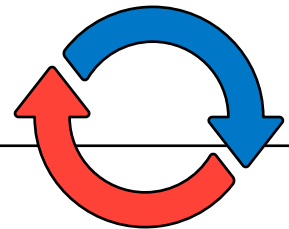
C Tech that connects

Cloud computing

Storing and accessing data and programs over the internet instead of on local devices.

Why use it? To save space and allow access from anywhere.

Real-world use: Used to store files online.

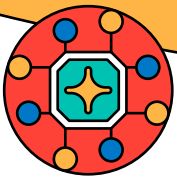


Networks

Systems that connect devices to share information – like LANs, WANs and the internet.

Why use it? To link different devices you are using for your idea together or to connect users.

Real-world use: Used by schools to connect computers and share resources.



D Tech that 'thinks'

What's a large language model (LLM)?

An LLM is AI trained on billions of words. It works by predicting what words or phrases should come next based on patterns it has seen before. This allows it to answer questions, summarise information, translate languages, and even write stories, scripts or code.

Machine learning

A type of AI that improves its performance by learning from data – often used in recommendations or predictions.

Why use it? To personalise experiences or improve results over time.

Real-world use: Used by streaming services to suggest shows you might like.

Natural language processing (NLP)

Technology that helps computers 'understand' and respond to human language – used in chatbots and translation tools.

Why use it? To help your idea understand or respond to written or spoken words.

Real-world use: Used by chatbots to 'understand' and reply to messages.

Voice recognition

Technology that 'understands' spoken language and responds or acts on it.

Why use it? To let users control the thing you create by speaking.

Real-world use: Voice-controlled speakers and virtual assistants respond to spoken commands.

Computer vision

AI that interprets visual information – used in facial recognition, image sorting or autonomous vehicles.

Why use it? To help your idea 'see' and respond to images or surroundings.

Real-world use: Used by social media filters to track your face.