



## AI in nature: Match-up game

### Learn how AI can be inspired by nature with a fun match-up worksheet

Artificial intelligence (AI) can learn a lot from nature! Just like how birds inspired the design of airplanes and drones, scientists look at how animals and plants solve problems to create smarter AI. For example, ants work together to find the shortest path to food, and this teamwork has inspired algorithms that help robots navigate. Similarly, the way our brains process information helps scientists design AI that can learn and make decisions. By observing nature, we can build AI that is more efficient, adaptable, and creative, just like the amazing creatures around us!

### Technology definitions:

- **Pattern recognition:** machine learning that automatically recognizes and sorts familiar patterns in images, sounds, and text.
- **Swarm intelligence:** when a group of things work together as a team to solve problems and do tasks. Each one does a small job, and by sharing what they find, they can figure things out faster and better than if they worked alone.
- **Drone:** a remote controlled pilotless aircraft or small flying device.
- **Network design:** like planning a big map that shows how different places are connected. Network design helps connect computers and devices so they can share information and work together smoothly.
- **Storage and retrieval systems:** a storage system helps you put everything in the right place, like your books or toys. A retrieval system helps you find it quickly when you need it. Computers use storage and retrieval systems to save information and find it again when you need it.

# Match-up worksheet

Natural inspiration

Technology



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# Answer key



----- Drone

**Explanation:** Birds can soar high, swoop down, and even hover in one place, and are really good at flying because they have strong wings and can control their movements very well. Drones are small flying machines that can do many of the same things birds do. Scientists and engineers watched how birds fly and used that knowledge to build drones. They designed drones with wings or propellers that help them fly smoothly, just like birds.



----- Network Design

**Explanation:** Spider webs are like a beautiful sticky net that spiders make, with lots of lines that connect in a special pattern. The internet is like a giant spider web made of invisible lines that connect computers all around the world. Just like the lines in a spider web, these connections help information travel quickly and safely from one place to another like when we use the internet to talk to friends, play games, or watch videos. When people design networks for the internet, they create lots of connections that work together to make sure everything stays connected and works well. This way, we can always find what we need online, just like a spider can always find its way around its web.



----- Pattern Recognition

**Explanation:** Each flower has its own unique pattern of colors and shapes. Think of AI as a robot that can look at all these flowers and figure out which ones are the same and which ones are different. Just like how you can look at a flower and say, “This one has red petals and a yellow center,” AI can do the same thing but much faster. Scientists get inspired by how flowers have these unique patterns. They teach the AI to look at lots of images of flowers and learn to recognize the patterns, like the colors and shapes.



Storage and retrieval systems

**Explanation:** Think about how squirrels collect and hide nuts to eat later. They find a lot of nuts and then hide them in different places. When they get hungry, they remember where they hid the nuts and go back to get them. In computers, we store information (like pictures, games, or homework) in special places, and when we need it, we use a system to find it fast. So, just like squirrels with their nuts, we use storage and retrieval systems to keep our stuff organized and easy to find!



Swarm Intelligence

**Explanation:** Bees work together in a super smart way to find the best flowers with the most nectar. They fly out in different directions, find flowers, and then come back to the hive. This teamwork helps them find food quickly and efficiently. Scientists watch how bees work together and use this idea to create something called “swarm intelligence.” This means getting lots of little robots or computer programs to work together like a team of bees. Each robot or program does a small job, and they share information with each other to solve big problems.