

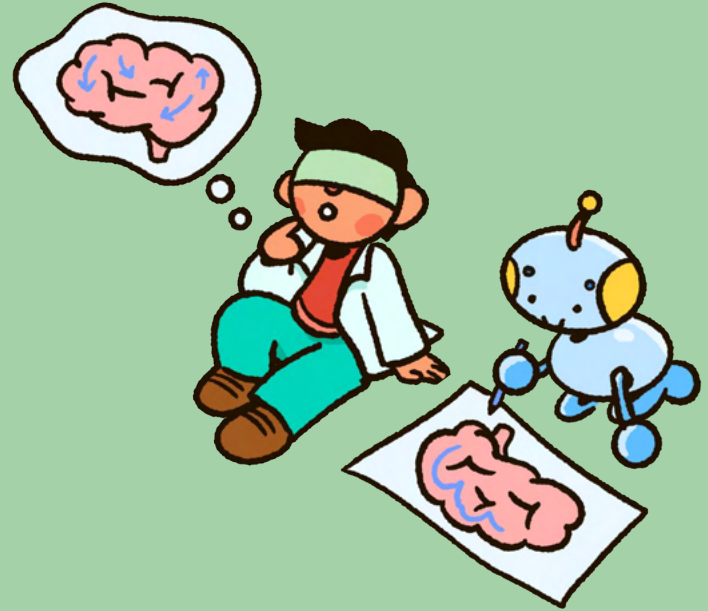
# Think Like A Squirrel: Nature's Spatial Memory Expert

Discover how observing animals' remarkable memory abilities can teach you about spatial memory and the brain's incredible adaptability.

<https://bit.ly/HYBactivity4>

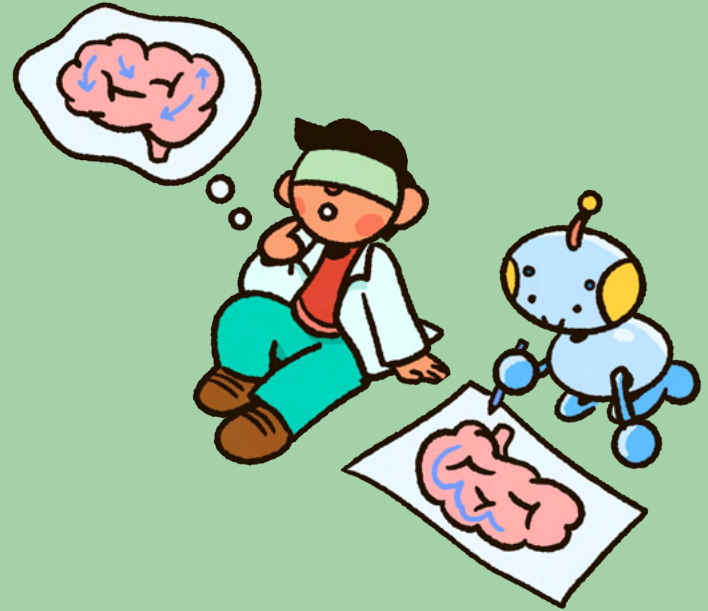
# Giving Instructions

- Step-by-step directions that are clear to you might not work for someone without similar experiences.
- You will need two people, two pieces of copy paper, and two pens.



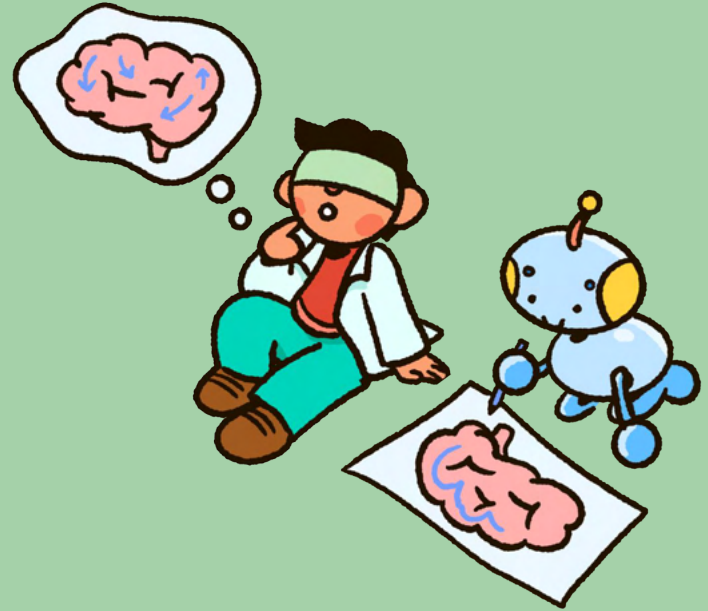
# Giving Instructions

1. Have one person draw a simple picture.
2. Without showing or facing your partner, try to explain how to recreate your picture while your partner attempts to draw it, with only your instructions for guidance.
3. When you are done describing what you drew, compare your drawing to your partners. *How do they compare?*
4. Switch roles and try it again.



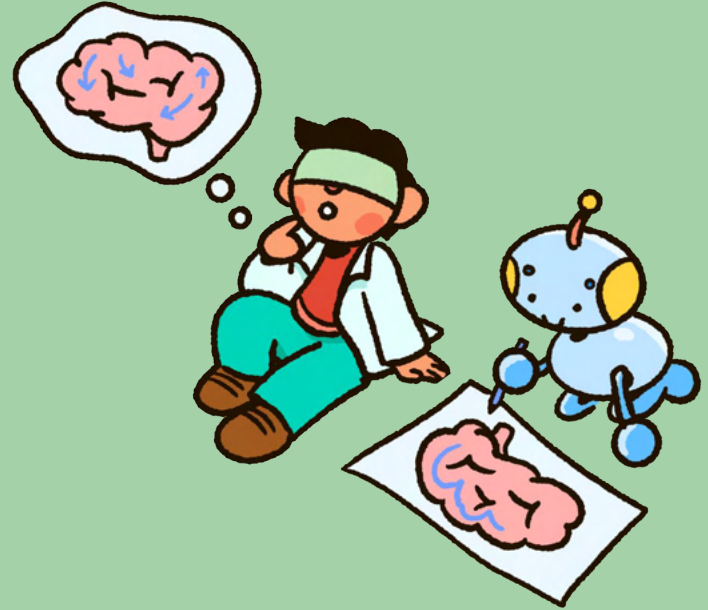
# Giving Instructions

- *Did you first consider the steps involved?*
- *Did you plan how you would describe the type of shape or its position?*
- *When trying to recreate your partner's picture, did you visualize what they were describing in your mind before you drew it?*
- *Which task was easier for you?*



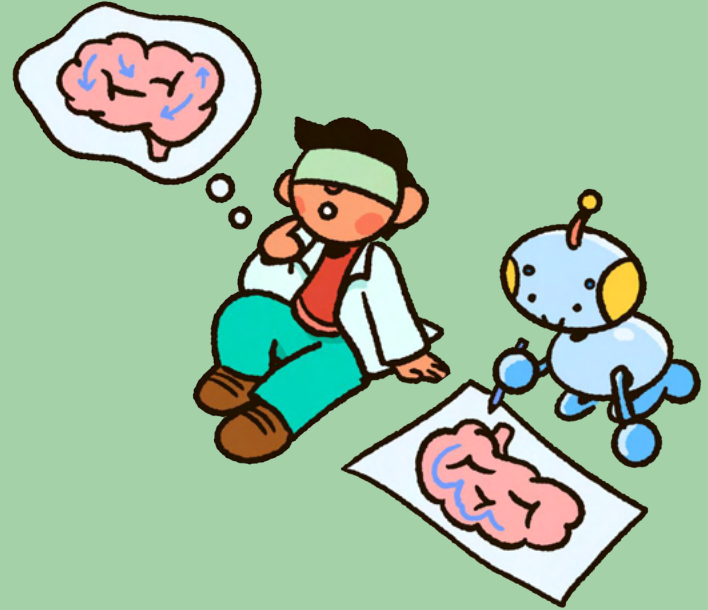
# Navigate Using Spatial Memory

- The ability to store and recall how to get from point A (school) to point B (home) is called **spatial memory**.
- It allows you to navigate the world around you and remember where things are on a short-term and long-term basis.



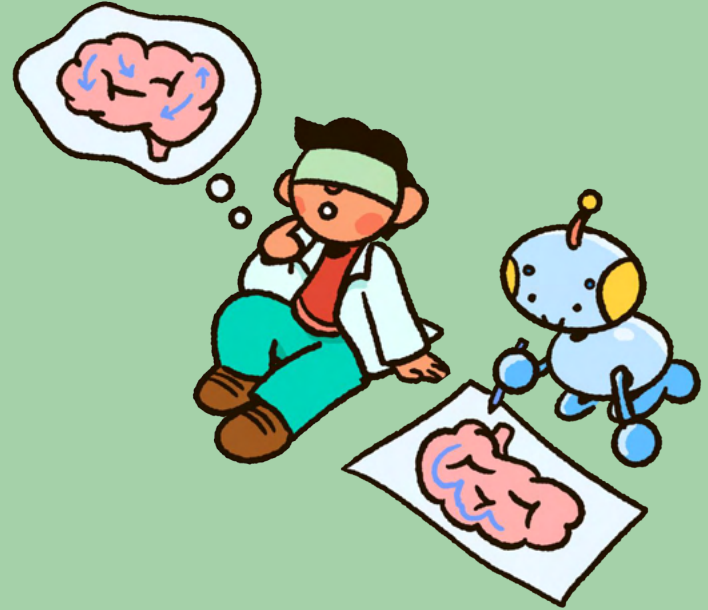
# Scientists Study Squirrels

- To prepare for winter, squirrels collect acorns, tree nuts, seeds, berries, and even bark.
- They store acorns in many, many locations, creating lots of hidden storage spots, called caches.



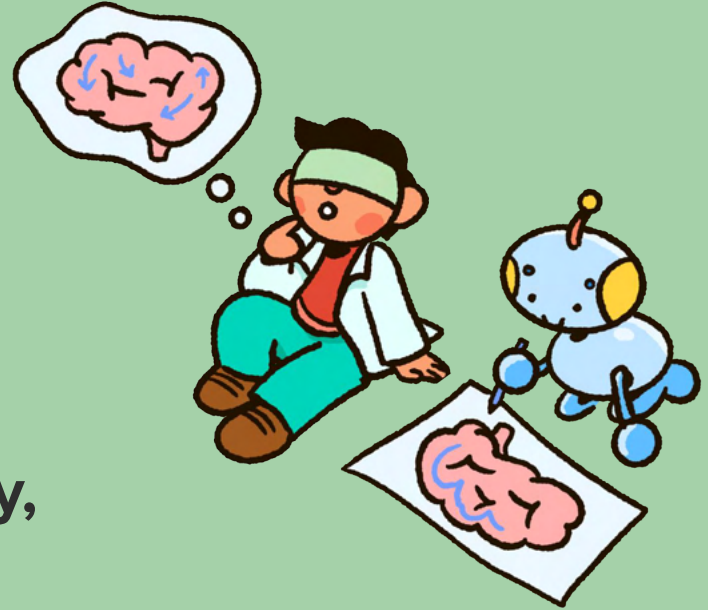
# Scientists Study Squirrels

- How do they remember where they put all these acorns?
- Research has shown that squirrels create a **cognitive**—or mental—map to remember where these nut stashes are.



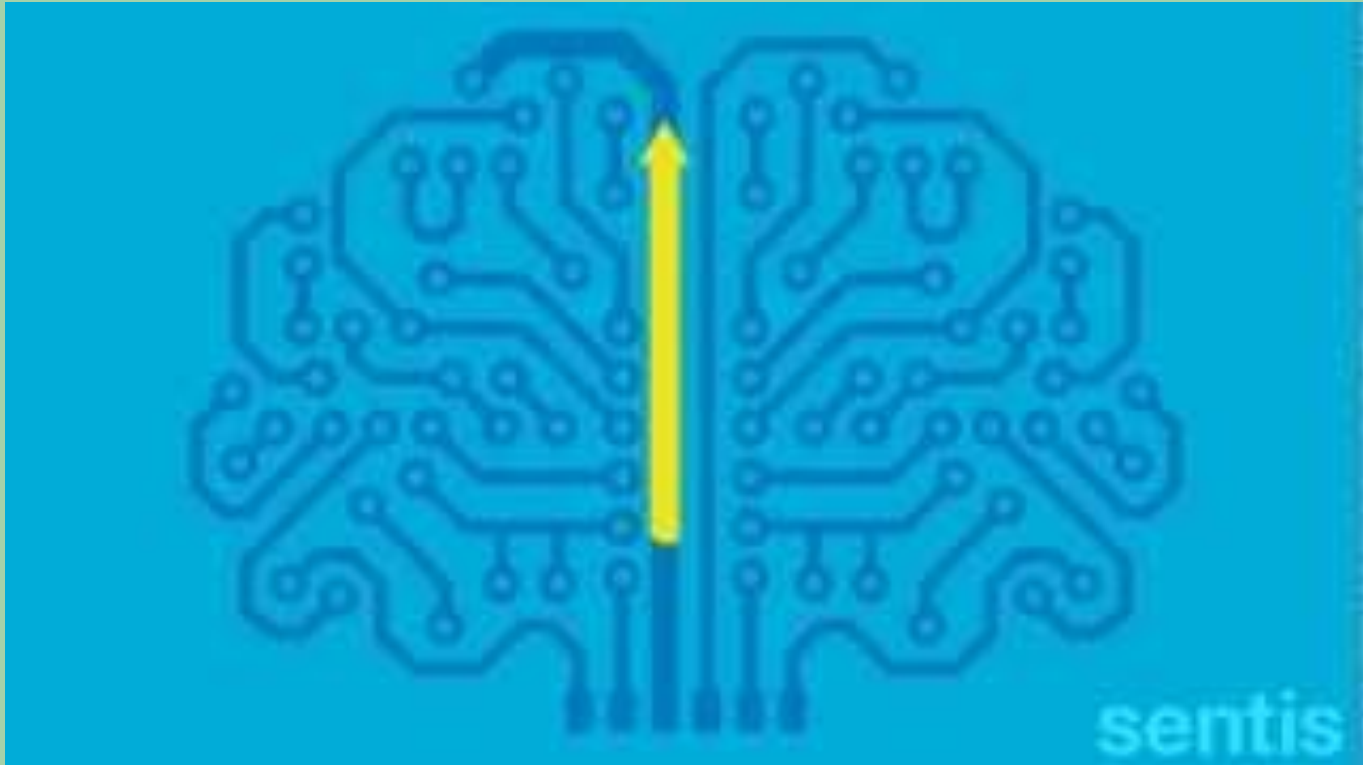
# Scientists Study Squirrels

- Spatial memory involves the **hippocampus** where information is gathered and stored.
- The hippocampus of squirrels is larger than that of similar species.
- This may be due to **neuroplasticity**, the brain's ability to adapt to environmental changes.



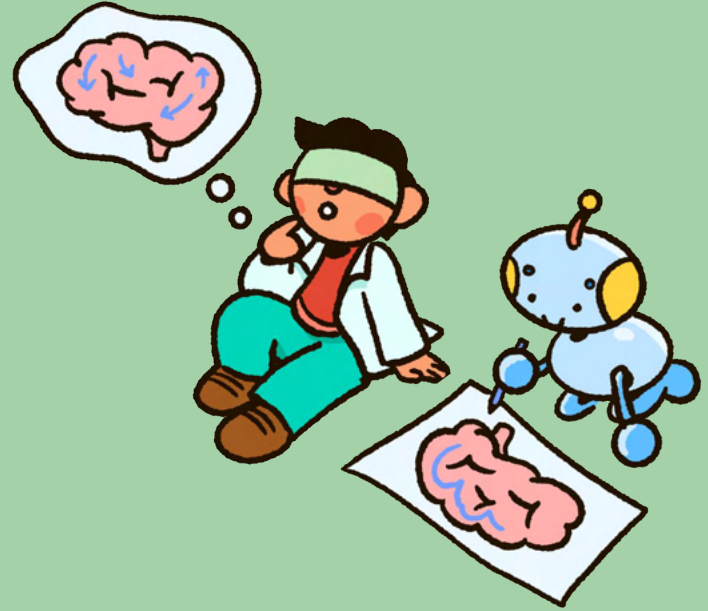


# Neuroplasticity



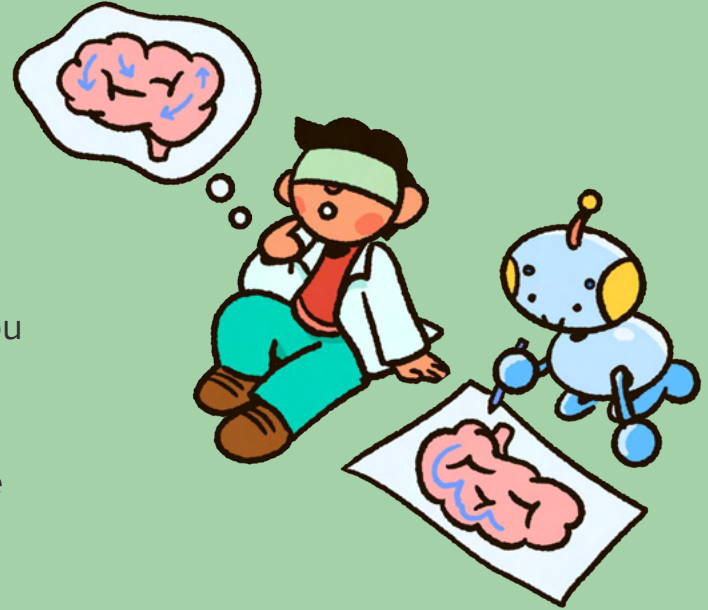
# Does Spatial Memory Affect You?

- Spatial memory helps you know where the food and bathroom are in your house.
- *What other ways can spatial memory be helpful?*



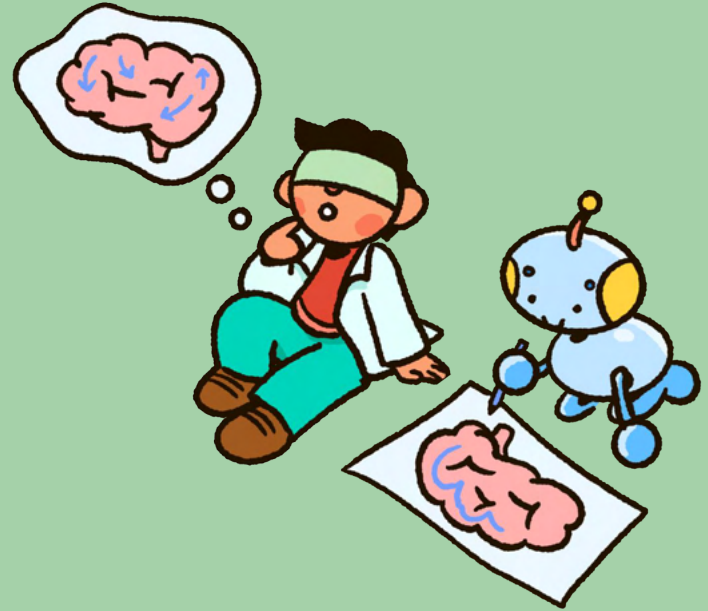
# Does Spatial Memory Affect You?

- Increase your spatial memory:
  - Play video games that challenge you to fit pieces together.
  - Play board games such as chess or checkers.
  - Work on jigsaw puzzles, tangrams, or Rubik's Cubes.
  - Play with LEGO or other building blocks that allow you to organize objects spatially and build physical models.
  - Create a mental map of a location, and then navigate around your map in real life.
  - Use spatial vocabulary to describe the positions of objects.
  - Solve—or draw—mazes.



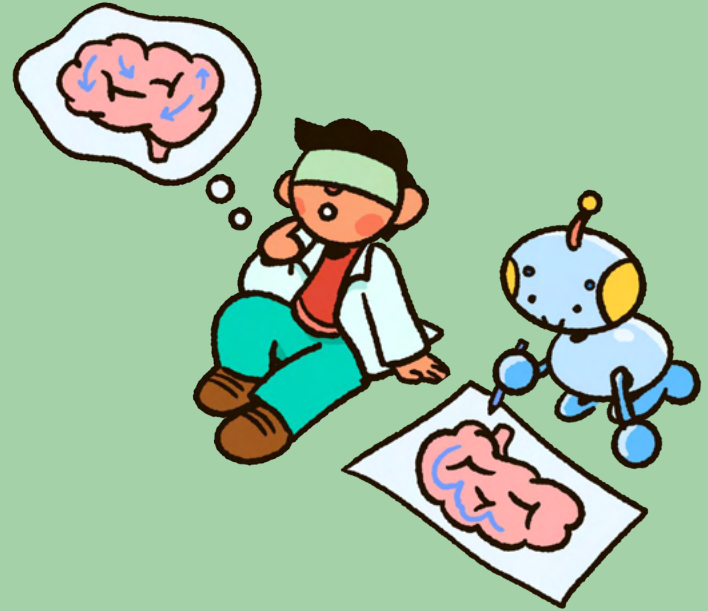
# Share out!

- *Do you enjoy any of the activities that increase spatial memory?*
- *How do you use spatial memory in your daily life?*



# Challenge Time!

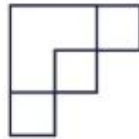
- We're going to try some spatial skills games that will test your skills.
- You will look at shapes and try to imagine how they can be moved and turned.



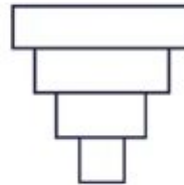
What would  
the 3D shape  
look like from  
above?



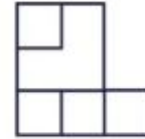
(A)



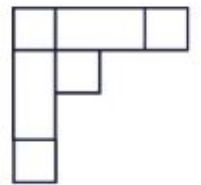
(B)



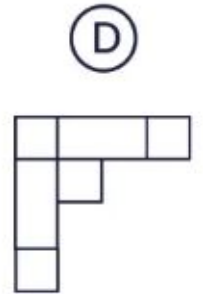
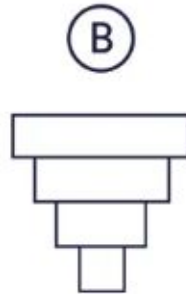
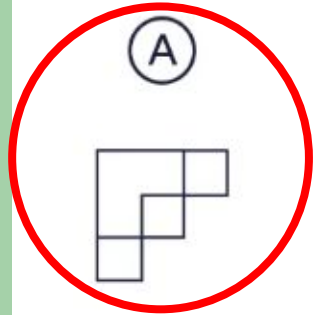
(C)



(D)



What would  
the 3D shape  
look like from  
above?



Which of the given shapes is the mirror image?



(A)



(B)



(C)

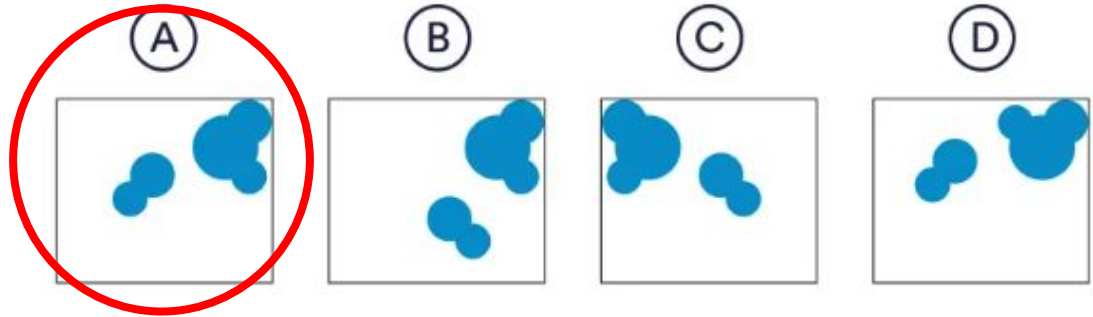


(D)

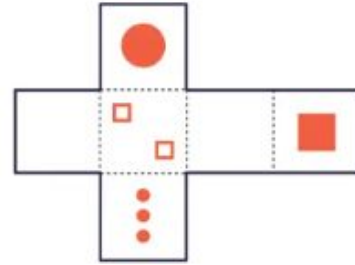




Which of the  
given shapes is  
the mirror  
image?



If folded, which of the shapes would it look like?



(A)



(B)



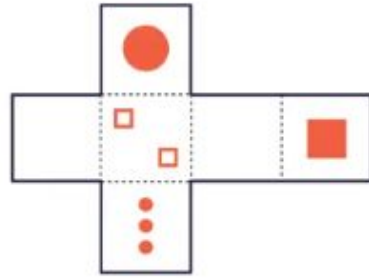
(C)



(D)



If folded, which  
of the shapes  
would it look  
like?



(A)



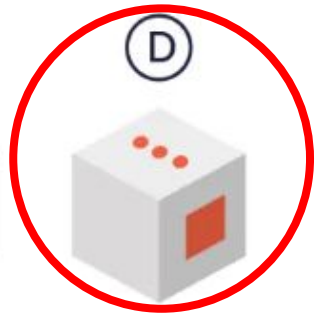
(B)



(C)

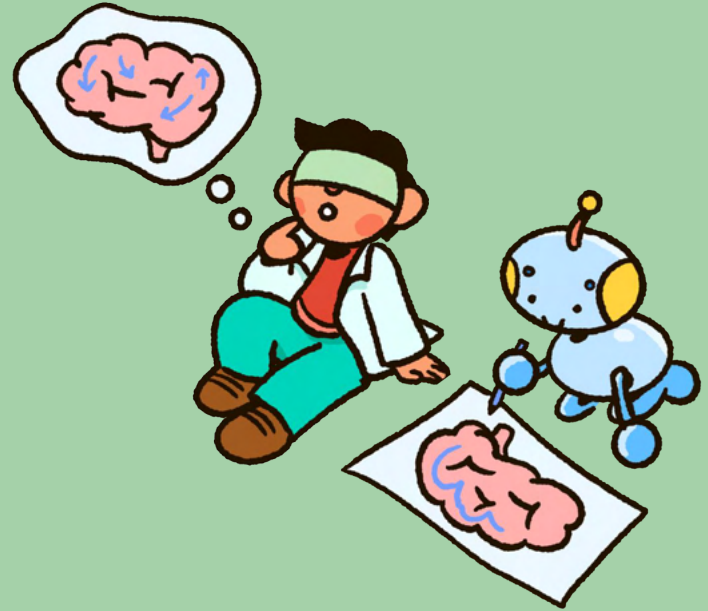


(D)



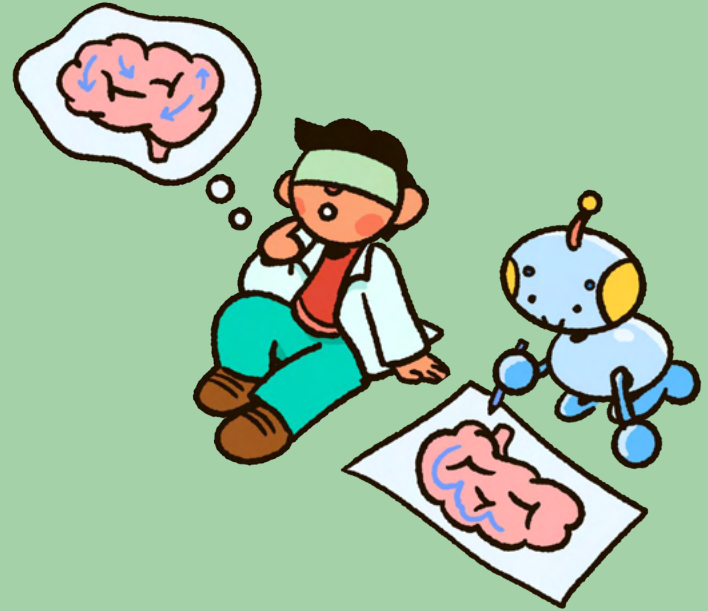
# Share out!

- *What are some strategies you used to solve the puzzles?*



# Brain Builder

- In the maze challenge, you won't be able to see the entire maze you are navigating, so you will need to work with a friend to identify and adapt to obstacles.
- Be sure to write down the numbers you pass over as you go.



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