GRID & SILICON

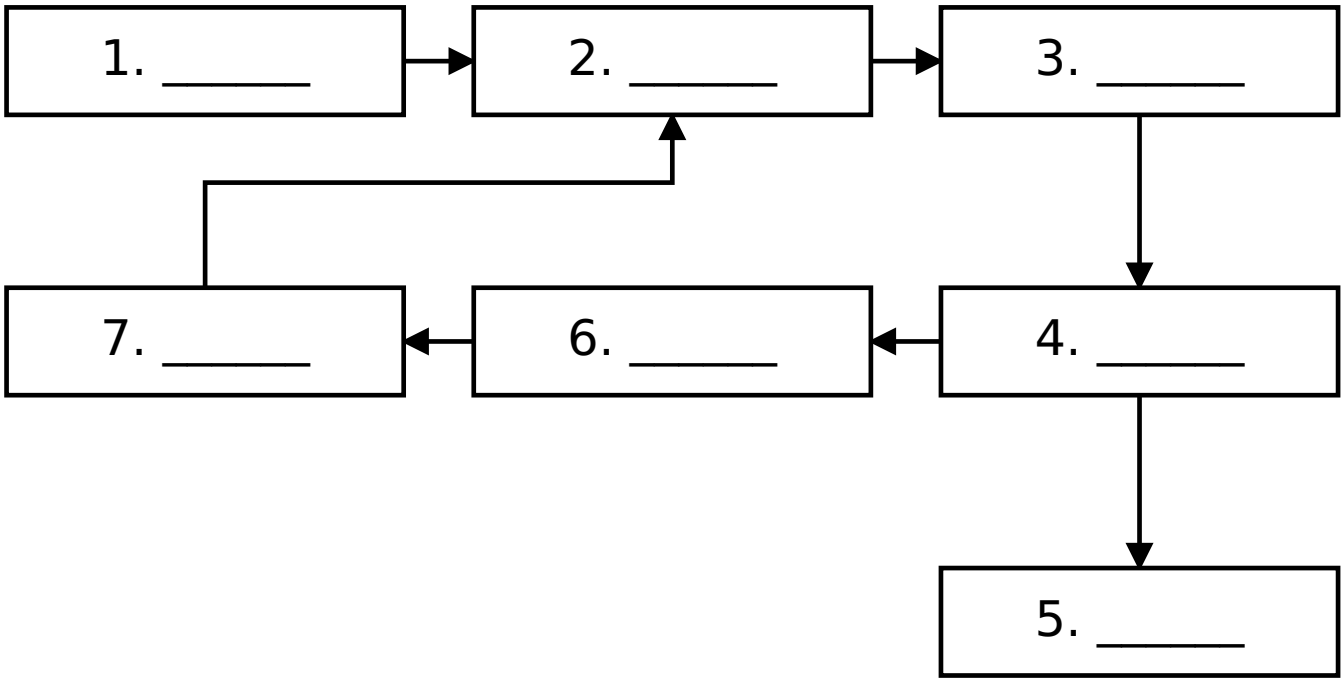
Student sheet

Liquid Cooling: How AI Chips Stay Cool

Name _____ Date _____

Keep the explainer beside you. You may look back for every answer.

Look closer



Word bank: Chip · Cold plate · Warm liquid · Heat exchanger · Outside · Cooler liquid · Pump

1. Which numbered blank receives heat directly from the chip?

2. What does the return pipe bring back toward the cold plate?

1. Circle the best answer.

1. A chip warms its metal contact. Which part receives that heat first?

A. Heat exchanger B. Pump C. Cold plate

2. Liquid is standing still in a pipe. Which part normally keeps it moving?

A. Pump | B. Cold plate | C. Heat exchanger

3. Two liquid circuits must stay separate but pass heat between them. What connects their heat paths?

A. Pump | B. Heat exchanger | C. Cold plate

4. Warm liquid leaves a chip. What has the liquid gained?

A. A smaller heat load | B. A lower temperature | C. Heat from the chip

5. A designer draws only an outward pipe. What completes the loop?

A. A second chip on the outward pipe | B. A return pipe to the cold plate | C. A larger fuel supply

6. Liquid has given up heat at the exchanger. Where should it travel next?

A. Out through the fuel supply | B. Back toward the cold plate | C. Into the computer wires

7. A new cooler works well. What do the computing chips still need?

A. Electrical power | B. Only outdoor air | C. Only replacement liquid

8. A room moves heat off its chips but has nowhere to release it. What is missing?

A. A path for heat beyond the chip system

B. A larger pump without a heat outlet

C. A second cold plate without a heat outlet

9. A pipe blockage slows the flow. What is a likely result?

A. Less need for a heat exchanger | B. More energy stored in the chip | C. Less heat carried away

2. Fill in the blank.

Use each word once.

Word bank: cold plate · pump · heat exchanger

1. A _____ collects heat from a chip.

2. A _____ moves liquid through pipes.

3. A _____ transfers heat between separate fluids.

3. Label the diagram.

Complete the numbered blanks on page 1 using its word bank.

4. Think about it

1. Your laptop gets warm. What job does its fan share with a liquid loop?

2. You carry a warm lunch box to another room. How does that help explain why moving heat off a chip is only one step?