SEMtech!
Student Engagement & Mentoring in Technology

Activity 1: "Volatile or Not?" – Interactive Sorting Game

Type: Drag-and-Drop Digital or Physical Card Sort
Learning Objective: Distinguish between volatile and non-volatile storage types.

Instructions:

- Provide students with **cards or tiles** (physical or digital, using a tool like Wordwall, Google Slides, or Jamboard).
- Each card contains a **storage type** (e.g., RAM, SSD, HDD, Flash Drive, DVD, Cloud Storage).
- Students **sort cards into two columns**:
  ➤ "Volatile" and ➤ "Non-Volatile."

Extension:
Have students justify **why** each belongs in its category by writing or speaking a 1-sentence explanation per card.

Tools You Can Use:

- Wordwall Sorting Game
- Google Jamboard or Canva Whiteboards
- Printable cards for hands-on classrooms

Activity 2: "Storage Match-Up Mystery" – Case-Based Role Play

Type: Scenario-Based Matching
Learning Objective: Apply knowledge of storage technologies to real-world use cases.

Instructions:

- Present 5–6 **user scenarios** (e.g., graphic designer, student traveler, medical lab tech near MRI equipment).
- Provide a **list of storage options** (e.g., SSD, HDD, NAS, Flash Drive, Optical Disc, Cloud Storage).
- In pairs, students must **match each user with the most suitable storage technology**, considering factors such as speed, durability, volatility, and environmental requirements.

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Example:

Scenario: "A field researcher in the Arctic needs reliable storage in freezing, rugged terrain."
Correct Match: SSD (durable, no moving parts, fast, works in harsh conditions)

Debrief:
Discuss as a class why some solutions are better than others in specific scenarios. Allow students to debate and defend alternate answers.

Tools You Can Use:

- Google Slides (with drag-and-drop matching)
- Printed case cards for small groups
- Nearpod or Pear Deck for live class polling

Activity 3: "Design Your Storage Stack" – Build-a-System Challenge

Type: Open-ended, creative and technical design
Learning Objective: Synthesize understanding of storage layers (RAM, SSD/HDD, Optical, Cloud, RAID) by designing an optimal configuration.

Instructions:

- Students are given a **user profile** (e.g., hospital database admin, film production studio, mobile app startup).
- They must **design a full storage architecture** including:
  - What type of RAM (if needed)
  - Primary storage device (SSD or HDD)
  - Backup storage (optical, cloud, RAID, etc.)
  - Justification for each decision

Deliverable:
Students **create a diagram or flowchart** and explain their architecture in a brief oral presentation or written paragraph.

Optional Tools:

- Canva, Lucidchart, or Google Drawings (digital diagrams)
- Poster paper and markers (for classroom visuals)

Bonus Option: Combine All 3 in a Learning Station Rotation

Use these activities in a **rotating station format** over one or two class periods:

1. Station 1: Volatile/Non-Volatile Sort
2. Station 2: Scenario Match-Up
3. Station 3: Design Your Stack

Students engage in multiple modes of interaction, including classification, application, and synthesis, which anchor **conceptual understanding** through **active learning**.