

Example CMD Activity Plan:

Elementary Science: Matter

See the lesson [Liquids in Spiderman vs. Hydroman](#)

1) Teaching Context

- **Grade level:** 1
- **Subject area:** Science and ELA
- **Unit:** Matter
- **What might come before or after this activity:** This activity will come near the end of our unit on matter, after they understand the qualities of liquids.

2) Content Objectives:

- Students will identify the properties of a liquid (i.e., takes the shape of the object it is in, does have mass and takes up space, can turn into gas).

Literacy/Critical Thinking Objectives: (i.e., CCSS for literacy, media literacy)

- Students will ask and answer questions about a text, describe relevant details and express ideas clearly.
- Students will analyze the credibility of a (fiction) text including identifying its purpose, the techniques used to communicate messages, and its scientific accuracy.
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3) Document(s) description and link:

Watch an excerpt from the animated cartoon. From our lesson [Liquids in Spiderman vs. Hydroman](#)

4) Key Questions:

- *From what you learned about liquids, what is accurate and inaccurate in this clip?*
- *Why might people who made the Spiderman clip have shown us inaccurate information about liquids?*

5) Decoding Plan:

- Move from an initial focus on the science presented in the clip – helping my students the to see how a cartoon can include inaccurate and accurate scientific facts - to the literacy/critical thinking learning about credibility and accuracy.
- I will need to show the clip twice, the first time to let students enjoy the action and the second time to focus on the scientific information.
- Before showing the second clip I will review what they know about liquid matter – probing for understanding that liquid takes the shape of the object it is in (it flows), it does have mass (it can hurt), and takes up space, and it can turn into gas (if heated).
- I will ask them **Who thinks they know what Hydro means?** (like hydrant). I will relate that to Hydro Man. I will
- then introduce the second showing by asking them to look for how the filmmakers use water. **What about water in this clip is accurate (true) and what could not happen because of the qualities of water we just reviewed?**
- After the second showing probe for content knowledge about liquids: **What did the water do in that clip?** (it was a puddle, it had no shape, it moved up and made a shape, it went into a solid, it evaporated) **What things could happen? Why?** (force hitting workers, puddle with no shape, evaporation) **What couldn't happen? Why?** (Solid form, shape by itself, arms changing into water). Continually probe for text-based evidence when students have the right answer: **Where did you see that in the clip?**
- Once students understand the science in the clip, I will move on to the media literacy questions: **Why would the makers of Spiderman show something if it wasn't possible?** If necessary, I will scaffold this question: **Why do you think this cartoon was made? (entertainment, fun). Was the purpose to teach us about science?** Finally, I will see if the students can generalize about credibility: **What does this teach you about watching TV, about what we can trust and not trust to have truthful scientific information?**

6) Pre + Post Decoding Activities:

This activity comes near the end of our Matter unit where I teach about matter including through literature (*Goldilocks*), labs and poetry (*What's The Matter?*). **NOTE:** given the gender dynamics in the class I may want to follow up on MJ's comment in the Hydro Man clip: *Mori, you don't force yourself on the people you love.*