

Initial student questions:

Why do planets float?

Why do we have to put plants in dirt?

Why do dogs bark?

How do you know if a cat is happy?

What was the first plant that grew?

How do interactive screens work?

How do flowers get their color?

How do video games affect us?

Student questions after sorting:**How to guide these questions:**

How does age affect the skill level of a video game player?

- ✓ Dependent variable: age
- ✓ Independent variable: player skill level

Would the temperature of the water affect plant growth?

- ✓ Dependent variable: water temperature
 - ✓ Independent variable: plant growth
- While an independent variable was identified, we encouraged these student to define exactly how they would measure plant growth (e.g. plant height)

Does homemade lip balm work the same or better than store bought?

- ✓ Dependent variable: type of lip balm
 - ✗ Independent variable: none
- These students were encouraged to be more specific about what they meant by “works better” (e.g. lasts longer)

Which kind of cell phone gets hotter the quickest?

- ✗ Dependent variable: temperature and time
 - ✓ Independent variable: type of cell phone
- We encouraged these students to simplify this question and identify only one dependent variable.

What can we do to prevent pollution?

- ✗ Dependent variable
 - ✗ Independent variable
- This was a great general question so we encouraged these students to brainstorm variables they thought might encourage people to reduce pollution (e.g. adding trash cans to a public space)

Final testable questions:

How does the brand of lip balm affect how long our lips will stay moist?

Will putting signs about pollution affect the amount of trash around the neighborhood?

Will the type of food affect how fast a hamster completes a maze?

Does the amount of glue affect how long our “slime” stretches?

Does the type of paper affect how long a paper airplane will fly?