

Name _____ Period ____ Date _____

THE CHECKS LAB WORKSHEET KEY

1. Tentative Explanation #1: [Any reasonable explanation that involves all selected checks is OK]
2. Tentative Explanation # 2:
3. Tentative Explanation # 3:
4. Final Tentative Explanation: [Don't tell students this, but there is no actual story here; all checks are fictitious. Therefore, the class can decide which team's explanation seems like the most likely one – for now. That's what scientists do!]

Questions for Discussion:

1. What bits of information on the checks were **valuable** to your group in formulating a tentative explanation? Students should notice and consider such things as dates (for sequence and season), whose checks they were, who signed each check, who the checks were made out to, the amount, and reason (if given).
2. What information was **useless**?
3. List any **misleading** information that was presented.
4. Why do we say that an explanation in science is "**tentative**?" [Something like:] Because new data/information may not fit previous explanation, so new one must be developed.
5. What 's another word for a "**tentative explanation**?" [Depending on age or experience, some students should recognize "Hypothesis" as the word for this.]
6. Could your **hypothesis** become a **theory**? If so, how? [Not all students may know this yet] Usually not directly. For a hypothesis to contribute to a theory, it must be tested (challenged) many times and be combined with other observations and tested hypotheses.
7. What's the difference between a **hypothesis** and a **theory**? [Not all students may know this yet] A hypothesis is a very tentative explanation, relatively untested, for something puzzling. A theory is a much better established explanation, based on tested hypotheses, and more observations. A theory is still "tentative," still subject to change, but less likely than a hypothesis. It's more durable.
8. Is your final hypothesis "**correct**"? Explain. [Not all students may know this yet] Hypotheses are never correct, but some are better than others. The best hypotheses must account for all known data, be logical, and be testable.
9. How could you "test" your hypothesis – i.e., what could you do to show your hypothesis is not correct? Look for more clues to see if they fit the current hypothesis, or not.

10. Besides science being **tentative** and scientists **collaborating**, what other characteristic of science not often realized did you experience? [Not all students may know this yet] Students may notice that bias, opinions and personal experiences do influence hypothesis formation. They may also recognize that hypotheses must be tested (challenged) to arrive at best hypothesis. They may also notice that this was not experimental. Scientists often have to use clues to figure out what happened in the past, and gather more clues to test those ideas.