Inquiry Skills Assessment

Name: John Doe
Activity: Why do we have insulation in our homes?

Science Inquiry Skills	Novice	Intermediate	Advanced	N/A
Formulating Questions				✗

Novice:
- Does not readily form questions when given new information or experiences.
- Questions are broad, not testable.

Intermediate:
- Readily forms questions when presented with new information
- Can distinguish between testable and untestable questions, with guidance.

Advanced:
- Uses prior knowledge or experiences to form several questions.
- Can readily distinguish between testable and untestable questions.

N/A: Activity did not require student to formulate questions.

Planning Investigations				✗

Novice:
- Uses a simple "watch and see" approach, can't plan further than the initial observation stage.
- Outlines general approach, but no details of controlling variables

Intermediate:
- Plans what to control, but does not follow through within investigation.
- Investigation contains treatment groups and control groups with replications.

Advanced:
- Executes preliminary or supplementary experiments before performing the main investigation.
- Revises experimental design based on the results from the preliminary investigations.

N/A: Activity did not require student to plan the investigation.

Using Tools and Techniques of Data Collecting				✗

Novice:
- Does not readily use tools (i.e. hand lens, camera) to extend the senses or measuring devices (rulers, balances, thermometers) to collect data unless prompted.
- Sees only the obvious, no notice of details.
- Unorganized or missing records.

Intermediate:
- Uses tools (i.e. hand lens, camera) to extend the senses or measuring devices (rulers, balances, thermometers) to collect data with some guidance or prompting.
- Able to follow a regular program of observation and measurement.
- Records are accurate, but not kept in a consistent manner to see changes/trends.

Advanced:
- Uses appropriate tools (i.e. hand lens, camera) to extend the senses or measuring devices (rulers, balances, thermometers) to collect data without guidance or prompting.
- Can judge and execute the degree of frequency and accuracy in all observations and measurements.
- Records are consistent and organized into appropriate charts, graphs and tables to clearly illustrate results.

N/A: Activity indicates the appropriate tools to use for the investigation. Data tables and graphs are outlined for the student.

Making Evidence-Based Conclusions		✗		

Novice:
- Holds on to original ideas.
- Does not integrate evidence or new information into conclusions.
- Cannot identify trends from data.

Intermediate:
- Uses evidence selectively.
- Forms conclusions based on only part of the data.
- Can identify trends from data with guidance or prompting

Advanced:
- Makes conclusions based on evidence.
- Able to interpret results from several replications/sources.
- Can easily identify trends from the data without guidance or prompting.

N/A: Activity does not require the students to make evidence-based conclusions.

Adapted from: Hein & Price (1994); Bass, Contant, & Carin (2009)