



Planning the inquiry

<p><b>3. How might we know what we have learned?</b></p> <p><i>This column should be used in conjunction with "How best might we learn?"</i></p> <p>What are the possible ways of assessing students' prior knowledge and skills? What evidence will we look for?</p> <p><b>Pre-Assessment</b></p> <p>Create a chart of solids, liquids, and gases and have the draw in examples.</p> <p>What are the possible ways of assessing student learning in the context of the lines of inquiry? What evidence will we look for?</p> <p><b>Formative Assessment</b></p> <ul style="list-style-type: none"><li>● picture sort of properties of matter</li><li>● list items found at home of solids, liquids, and gasses</li><li>● students will record findings after experiments</li></ul>	<p><b>4. How best might we learn?</b></p> <p>What are the learning experiences suggested by the teacher and/or students to encourage the students to engage with the inquiries and address the driving questions?</p> <ul style="list-style-type: none"><li>● Experiments changing from one state of matter to another:<ol style="list-style-type: none"><li>a) solid to liquid: rubbing chocolate chips to heat up to change to a liquid</li><li>b) liquid to solid: water (or liquid) in freezer to make popsicles</li><li>c) liquid to gas: baking soda in a balloon then drop in vinegar, glass of water that evaporates over time</li></ol></li><li>● Sound, heat, light energy<ol style="list-style-type: none"><li>a) sound- hanger attached to string and cup and bang items around room</li><li>b) heat- go outside and feel sun rays, put hand in front of flashlight</li><li>c) light- sort light sources</li></ol></li></ul> <p>What opportunities will occur for transdisciplinary skills development and for the development of the attributes of the learner profile?</p> <ul style="list-style-type: none"><li>● thinking- access prior knowledge and build onto with new gained information, making connections between ideas,</li><li>● research- formulate questions to collect and record data observed, draw conclusions from results</li></ul>
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**5. What resources need to be gathered?**

What people, places, audio-visual materials, related literature, music, art, computer software, etc, will be available?

materials: chocolate chips, zip-lock bags, baking soda, balloons, vinegar, popsicle sticks, dixie cups, hangers, string, flashlight, crayons

videos on energy and matter (BrainPop Jr., united streaming)

Rame Hruska- architect to discuss what matter to use with building

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Reflecting on the inquiry

**6. To what extent did we achieve our purpose?**

Assess the outcome of the inquiry by providing evidence of students' understanding of the central idea. The reflections of all teachers involved in the planning and teaching of the inquiry should be included.

How you could improve on the assessment task(s) so that you would have a more accurate picture of each student's understanding of the central idea.

- Students understood the type of matter and the use of the objects but they had difficulty with how the object could be changed into something else or be changed.
- More focus in lessons/activities on the force of changing matter during the unit.

What was the evidence that connections were made between the central idea and the transdisciplinary theme?

- Students noticed how matter changed states.
- Students identified states of matter as they used the objects.
- Rocks are used for metal which is made into many useful items.

**7. To what extent did we include the elements of the PYP?**

What were the learning experiences that enabled students to:

- develop an understanding of the concepts identified in "What do we want to learn?"
  - Heat and cooling caused changes in states of matter by using
    - ice cubes, sun, freezer
    - crayons and hair dryer
    - chocolate and body warmth
  - Sound energy- traveling through string and hearing/feeling vibrations
- demonstrate the learning and application of particular transdisciplinary skills?
  - Created diagram of matter changing states from heat and cooling
  - Listing ways to use a particular matter
  - Observing changes in matter and how others used matter
  - Sorting matter
- develop particular attributes of the learner profile and/or attitudes?
  - Inquirer- Experiments and asking questions about how things changed and what was matter
  - Thinker- Ideas on how to use different matter
  - Curiosity- Wanting to know more about matter around them (everything)
  - Appreciation- Give thanks for having many different resources because they provided us with many things and have many different uses

**8. What student-initiated inquiries arose from the learning?**

Record a range of student-initiated inquiries and student questions and highlight any that were incorporated into the teaching and learning.

Student inquiries were mostly focused on “what kind of matter is this?” or I noticed that we have mostly solids. There were also many questions about gases and what air is made up of.

It was harder for the students to understand gases.

*At this point teachers should go back to box 2 “What do we want to learn?” and highlight the teacher questions/provocations that were most effective in driving the inquiries.*

**What student-initiated actions arose from the learning?**

Record student-initiated actions taken by individuals or groups showing their ability to reflect, to choose and to act.

Students still identify many objects as types of matter that they found throughout the year.

They became more aware of what is around them and they verbalized these findings/discoveries.

**9. Teacher notes**

We crammed in a bunch of science TEKS and didn't have the time to focus on it. Trying to teach social studies along with this unit is not working. As a team we will need to tie the language plans to have a social studies focus to get grades for SS.

This unit focussed on matter and did not extend enough into how humans use it

How could we tie it into measurement?

students could measure liquids and use capacity units

Students could use cream and shake it and turn it into butter to show kinetic force

A teacher felt successful tying it into nouns

An architect visited a class and talked about turning solids into a structure or home

Teachers can give the students materials and then they can try to make something useful

Teachers could bring in a helium bottle and show how things float with helium. Students could breathe in helium and how it changes their voices.

**Focus on the changing of matter.**