

Science Inquiry

Supporting 21st Century Learning Skills
Presented by Phaedra Taft and Jennifer Hawkins

Inquiry is hands-on, minds-on science exploration.

When students are doing inquiry based science, an observer will see that:

Children View Themselves as Scientists in the Process of Learning.

- They look forward to doing science, demonstrate a desire to learn more.
- They seek to collaborate and work cooperatively with their peers.
- They are confident in doing science; they demonstrate a willingness to modify ideas, take risks, and display healthy skepticism.

Children Accept an "Invitation to Learn" and Readily Engage in The Exploration Process.

- Children exhibit curiosity and ponder observations.
- They move around selecting and using the materials they need.
- They take the opportunity and the time to "try out" their own ideas.

Children Plan and Carry Out Investigations.

- Children design a way to try out their ideas, not expecting to be told what to do.
- They plan ways to verify, extend or discard ideas.
- They carry out investigations by: handling materials, observing, measuring, and recording data.

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Children Communicate Using a Variety of Methods.

- Children express ideas in a variety of ways: journals, reporting out, drawing, graphing, charting, etc.
- They listen, speak and write about science with parents, teachers and peers.
- They use the language of the processes of science.
- They communicate their level of understanding of concepts that they have developed to date.

Children Propose Explanations and Solutions and Build a Store of Concepts.

- Children offer explanations from a "store" of previous knowledge.
- They use investigations to satisfy their own questions.
- They sort out information and decide what is important.
- They are willing to revise explanations as they gain new knowledge.

Children Raise Questions

- Children ask questions.
- They use questions to lead them to investigations that generate further questions or ideas.
- Children value and enjoy asking questions as an important part of science.

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Children Use Observation.

- Children observe, as opposed to just looking.
- They see details, they detect sequences and events; they notice change, similarities and differences, etc.
- They make connections to previously held ideas.

Children Critique Their Science Practices.

- They use indicators to assess their own work
- They report their strengths and weaknesses.
- They reflect with their peers.

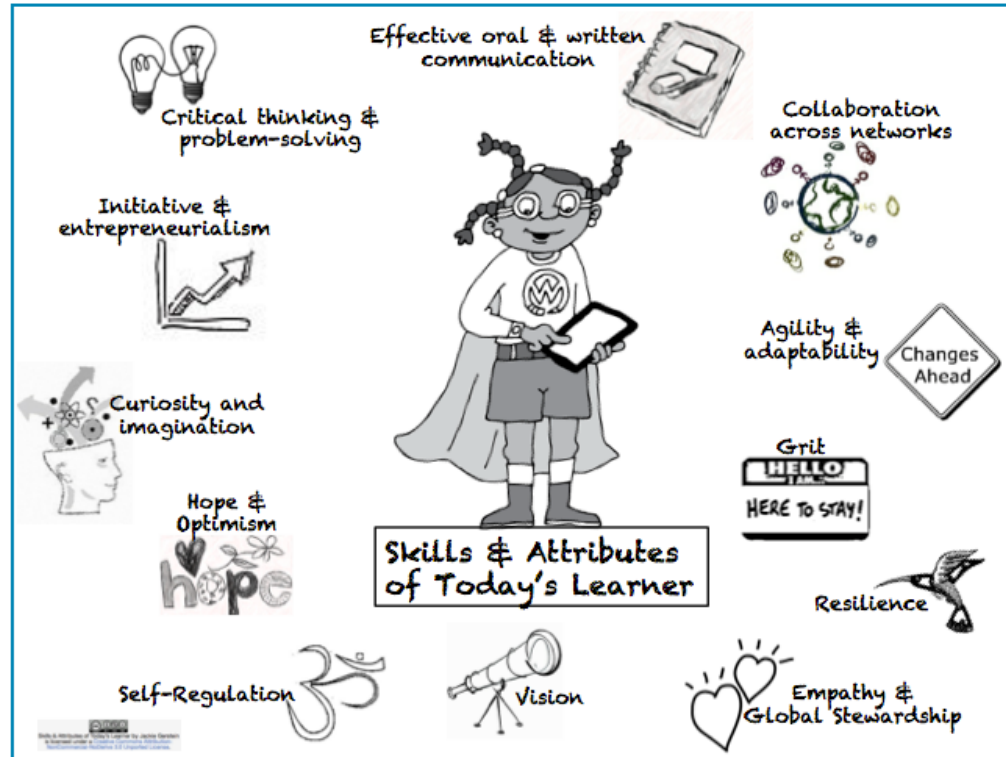
Sample Inquiry Starter

Explore ways to make the bulb light.

Record what you NOTICE and WONDER on your T chart.

Which of these attributes of a 21st Century learner did you engage in?

How can you encourage these at home????????



How can you encourage questioning with these topics?

Cooking

Transportation

Gardening

Food and drink in the fridge

Weather

Snow

Encourage your child to ask questions.



Resources

The Science of Cooking

<https://www.exploratorium.edu/cooking/candy/index.html>

Scientific American article, “Kids Learn Better When You Bring Science Home:

<http://blogs.scientificamerican.com/guest-blog/2011/05/02/kids-learn-better-when-you-bring-science-home/>

The Cat in the Hat Knows A Lot About That! http://www.pbs.org/parents/catinthehat/explorer_guide_science_inquiry.html

The Westport Public Library MakerSpace

<http://westportlibrary.org/services/maker-space>