



Observing and Making Theories

on May 10, 2014



Observing Phenomena and Forming Theories

Observing, thinking, experimenting and validating form a basis of science thinking.

“The use of logic and the close examination of evidence are necessary but not usually sufficient for the advancement of science. Inventing hypotheses or theories to imagine how the world works and then figuring out how they can be put to the test of reality is as creative as writing poetry, composing music, or designing skyscrapers. Sometimes discoveries in science are made unexpectedly, even by accident. But knowledge and creative insight are usually required to recognize the meaning of the unexpected.”*

Looking at a bit of colored light on the rug, and the colored plastic we had put on the window, Hunter exclaimed:

“Ooh, ooh! I know what we can do! Can we get magnifying glass? And then we can look there to see if little pieces are coming off onto the ground?”

Did he imagine the color was falling off of the window onto the rug?



Theories about a patch of light cast on the rug.

Max H. “It looks like a triangle sort of thing!”

Tyler “No! It’s making sort of like a rainbow- a light rainbow! (Inside) there’s a black rainbow.”

Max H. “Anna, I discovered something! There’s a rainbow inside of the triangle we’re making! See the rainbow line? **This is nothing about the sun, it’s about the magnifying glass.**”

Tyler “Look. Look. Everything over here is making a shadow, but in the shadow it’s a rainbow!”

“Guys, if we want to know what this is, we gotta look!”
“I wish I had my own camera, I’d take a picture of it!”



Theories about how the Moon changes shape

Max H. “The Moon can fold up.”

Tyler “The moon can open and close like a door.”

Duke “It opens and closes.”

Max P. No, that’s wrong, actually clouds cover the moon, so we can’t see all the parts.”



Theories about shade and the Sun. Is it in our sky or is it far, far out in space?

Juliette “..it’s getting shadier out, because a cloud is moving onto the sun. But then it will move away and it will get sunnier out.”

Robbie “I think that Juliette was wrong about how it was getting shady, because clouds aren’t in outer space. It might come from clouds, or it might come out from stars that are out of light.”

Maddie “It might look like the sun is in the sky, but it’s really in outer space. So if you try to jump up high and touch the Moon a little bit .. see the Sun is exactly a star.”



* www.edutopia.org/blog/how-to-teach-students-to-think-like-scientists

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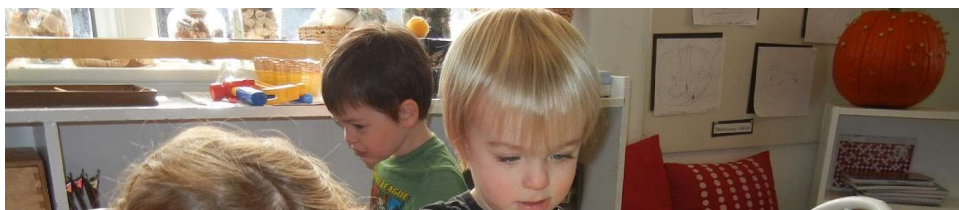
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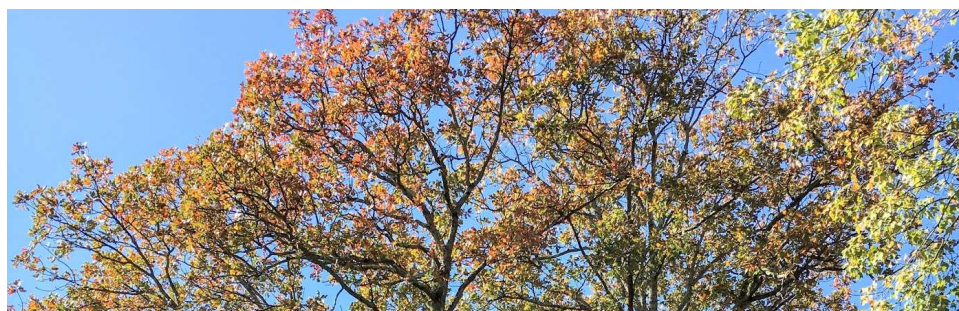
THE DIFFERENCE BETWEEN CENTERS AND PROVOCATIONS

During a meeting a few weeks ago a teacher asked the preschool staff what the difference was between 'centers' and 'provocations'. It seems to me that there are a lot of similarities between the 2 things. Provocations are materials or experiences that Teachers set out to provoke children's thinking. From what I...



Umbrella Project 2017

The community at Sabot adopts a big idea every school year. Called the umbrella project, it's part of my job to shepherd it through. Teachers agree to set up encounters with the idea to provoke thinking and discussion. To start with, we spend time thinking about questions and provocations that will h...



Beginning a Big Project: Listening

There are a lot of things that influence beginning a new project in a school that doesn't have it's curriculum written out beforehand. I'm thinking now about schools that try to have an image of children as capable of designing their own learning experiences, that embrace flexibility, giving time to go d...

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