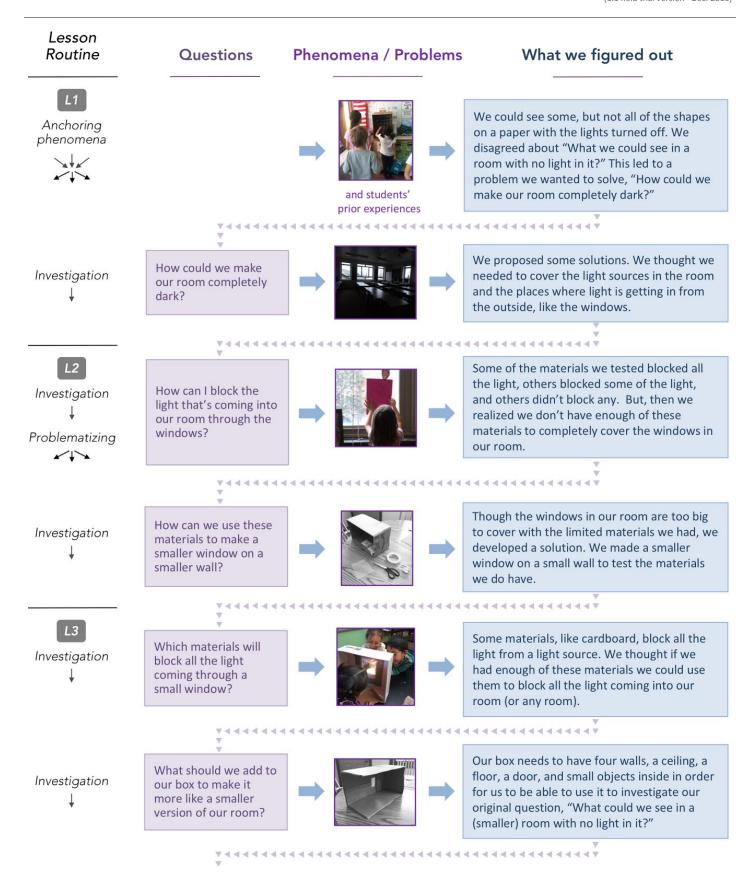
How Does Light Help Me See Things And **Communicate With Others?**

1st Grade **PS4 Waves** Storyline Skeleton

[1.1 field trial version - Dec. 2016]



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[1.1 field trial version - Dec. 2016] Lesson Phenomena / Problems Routine Questions What we figured out L4 What do we see when We weren't all in agreement on whether we Investigation we look into a place could see anything inside a box with all the where all of the openings covered (different people reported outside light is blocked different results). from getting in? We developed a solution for all looking into What materials can we the inside of the same box at the same time. Investigation use to help us all see We tested projecting the image from a into the same box at camera phone or tablet to the front of the the same time? L5 We argued that objects in a space with no How does letting light light are not visible, objects in a space with Putting pieces into the box affect Previous enough light are clearly visible, and objects in together phenomena in what we can see inside a space with very little light are somewhat L1 through L4 it? visible but difficult to see clearly. There are other kinds of light sources in the What are some light world, and we argued that some are not good sources that are small Investigation enough and safe ones to bring into our box because they are enough to bring into too big, too hard to move, or dangerous to our box? use in class. L7 Previous We developed a model to predict and explain phenomena in What we would see in why you can't see anything in a box or cave Putting pieces L1 through L7 the box (or a cave) if (or any place) without a source of light. Light and... together we brought a light must be able to get into the place you are source into it? looking at in order to see things in that place. L8 Where else do people People make objects out of different Investigation use materials to block materials to block light for different reasons. out the light from When light is blocked from a light source a getting to a certain shadow is formed on the surface of another spot or place?



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Lesson Phenomena / Problems Routine Questions What we figured out L9 Materials that let all light through don't create Investigation Will all materials create shadows. Materials that block all the light a shadow? create shadows. Materials that block some, but not all of the light, also produce shadows. However, they aren't as dark as the ones from materials that blocked all the light. L10 Lots of kinds of light sources and materials Where else do we find were used to block light in the world outside materials being used to Investigation of our school. We discovered that some light block light and where sources were being used to communicate else do we find light sources? messages to people. L11 What are some places We realized that there are places in our school in our school where **Problematizing** where it would be useful to be able to Students' people might need to communicate a message without making a prior experiences communicate without sound. We designed and tested some making a sound? possible solutions. Investigation What solutions can we We designed and tested lots of different design to solve these possible solutions. problems? 4444444444* There were design features across the How can we evaluate Design solutions Putting pieces our designs and use different solutions that might be useful to from L11 and together the results to improve incorporate into our designs. We wanted to phenomena from try to do this in another round of engineering. our own design? L1 through L10 How could we use light Some materials can redirect light. We Investigation to communicate with designed and tested some possible solutions someone in another using these materials. hallway? L12 We figured out a lot about how light helps us How can we share our All previous see things and communicate. We wanted to Putting pieces phenomena design solutions and share what we figured out with others, so we together and design what we figured out transformed our classroom into an interactive solutions from with others? museum, invited visitors, and shared our L1 through L11



findings and solutions with them.