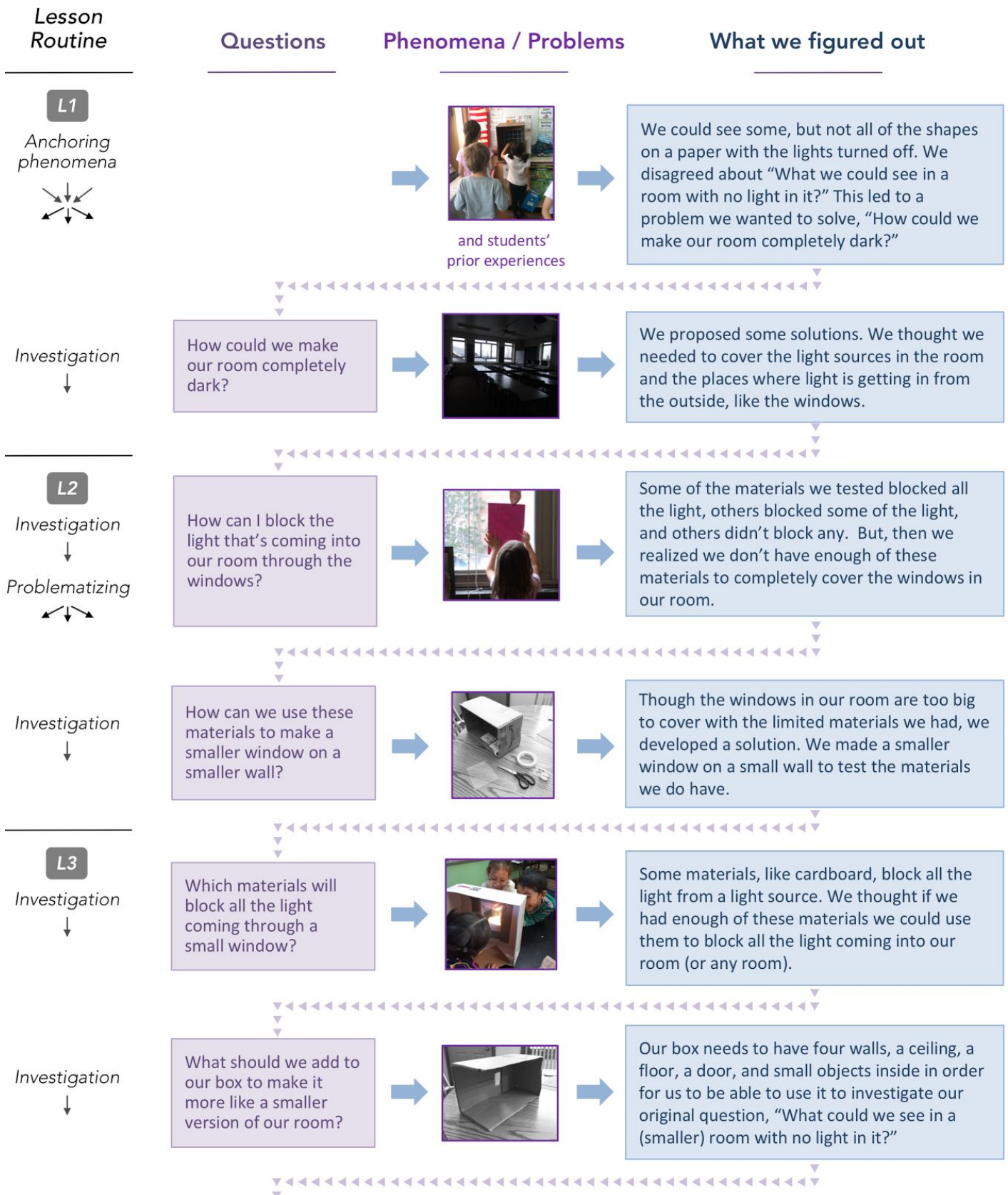


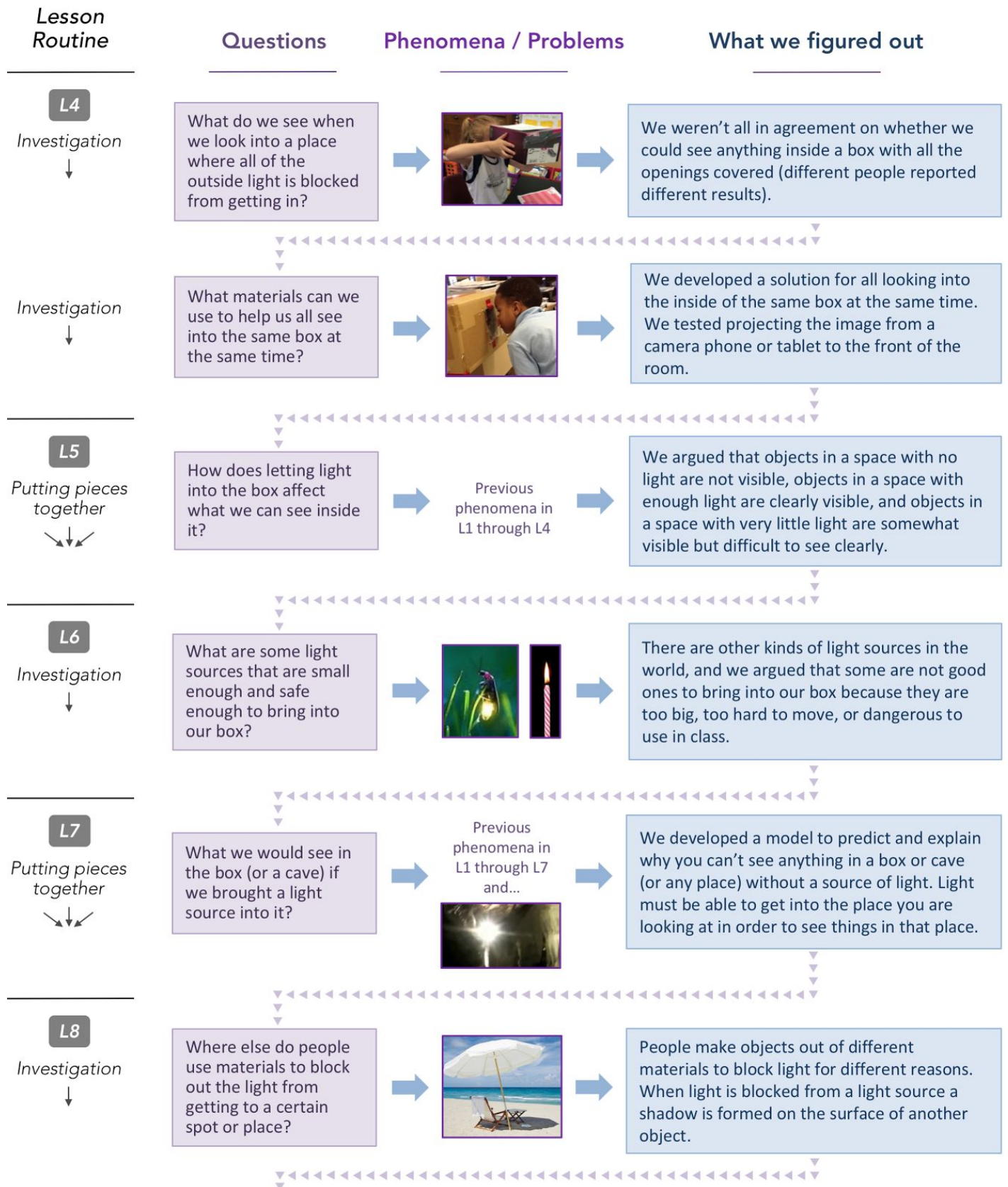


How Does Light Help Me See Things And Communicate With Others?





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

