Sink or Float?

Note: It should be observed that some of the concepts in this book continue some misconceptions. (Hippos can float or sink because of their fat content which is buoyant, breath and positioning their bodies. Ice is water in a different state of matter. A boat will not float to the top of the water when fully submerged.)

Vocabulary: Sink – when an object stays on the bottom of a liquid

Float – when an object goes to the top of a liquid

Water – the most common liquid found on earth and an important one for our survival (we are made up of about 70 percent water)

Ice – the solid form of water

Water Vapor – the gaseous form of water

Liquid - A liquid has size but no shape. You can push through it and it changes its shape to fit the container it is in. Liquids can pour from one container to another. Example: Olive Oil

Solid - A solid has size and shape. You cannot push through it. Example: Wood Block

Gas - A gas has no size or shape. It takes the size and shape of its container. Example: Air

Heavy – something that weights a lot. Example: Car

Light – something that weights a little. Example: Feather

Displacement – pushing a liquid out of the way and raising the water level as a result

Volume – the space a liquid takes up

Picture Walk & Prediction: What will we be talking about? What items do you think might sink or float in water? Could some items do both? Have you been swimming? Can you float or sink or do both?

Reading: How do you describe floating? How do you describe sinking? Could a hippo also float like you? Could a boat sink? What happens to boats that would make them sink? How could we test our predictions about what makes boats sink? Let's think about the three children on a raft. Could that also affect our boats? Why or why not? How do we test those predictions?

Response: Try the boat experiment they come up with.

and/or

Would sinking or floating be different in other liquids? Could one liquid float on another or would they mix together? Can you think of other liquids we could use for our predictions? How could we test our predictions? Are there ways to change our water into ice or water vapor? What would we need to do? How could we test it? (Discuss and experiment with warming and cooling. Examples: Parents boiling water for noodles and putting water into an ice cube tray.)

Hot Rod Hamster

Vocabulary: Design – A plan of the shapes, sizes, colors and building materials needed to create something

Material – The things being used to build

Construction – the act of building something

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Water – the most common liquid found on earth and an important one for our survival (we are made up of about 70 percent water)

Liquid - A liquid has size but no shape. You can push through it and it changes its shape to fit the container it is in. Liquids can pour from one container to another. Example: Olive Oil

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Picture Walk & Prediction: Before we read Hot Rod Hamster, let us think about water. We want to create a boat. Do you think we want to create a boat that sinks or floats? What do we want our boat to do? Does it carry things across the water? What should it carry? Remember this boat we are going to build, like Hamster's car, is a tool that we can build to meet our needs. Let us see how he makes choices to meet his wants and needs.

Reading: What is Hot Rod Hamster's need? Where does he go and who does he talk to to help him with his needs? Did he choose a big car? Why not? Is bigger always better? (Compare to old super computers or cell phones. Our needs are for smaller cell phones, not larger.) Hamster chooses the material his tires are made out of. Would he want tires made of glue? Why or why not? What does the engine help his car do? Hamster is choosing how his car looks. What would you decorate your car with? The dog included a helmet. What does the helmet do? Why is safety important?

Response: Using the same idea to build our boat, what is our wants or needs for our boat? Where should we go or who should we talk to to help with our design and materials? What parts do we need on our boat? How can we decorate it? What will keep our boat safe?

(Build a boat with clay and test it with weights like bear counters or plastic animals.)