



# Seeds of STEM: Integrated STEM At-Home

## Week 2: Water and Ice

Each activity can take anywhere from 10-30 minutes.

### Day 1: Exploring Water and Ice

- Before solving problems, it's good to explore new concepts and ideas. Try these activities with your child: stack ice cubes, place ice cubes in water, pour water on top of ice, use an ice cube to "draw" on a colored piece of paper.
- As they experiment, ask questions: What do you feel? What do you see? What happens when you pour water on top of the ice, stack ice cubes in a tower, etc.?
- Encourage your child to draw or take pictures of their ice exploration for future reference.



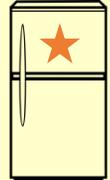
### Day 2: Melting

- Explore different ways of melting ice cubes: place an ice cube on a plate in the sun, place an ice cube on a plate near a radiator or heating vent, pour warm water over an ice cube, melt the ice cube with a hair dryer, in the microwave, in a slow-cooker, or on the stove.
- As they experiment, ask questions: What is happening to the ice? Why are we using heat or warmth? Explain that when we heat the ice it melts, turning into water.
- Set up an ice competition: place ice chunks of different sizes on a plate – which will melt first?



### Day 3: Freezing

- Investigate items from the freezer. As they explore, ask questions: What do these frozen things have in common? What do these frozen things look like? What do they feel like?
- Have your child help you to freeze ice cubes. Measure the time it took the water to freeze.
- Add food coloring, a few drops of paint, or an old marker to add color to your ice; once frozen, have your child create ice-art.
- Place a small toy inside 4 containers and freeze them for use on Days 4 and 5.



### Day 4: We Have a Problem!

- Show your child the containers from Day 4: the toys are frozen in ice! Tell your child they will be an engineer and solve the problem.
- Who can get the toy out first without breaking it? Help your child brainstorm and plan some solutions.
- Test your solutions. Set a timer and start melting!

*These children buried their frozen food under leaves.*



### Day 5: Room for Improvement

- Help your child think about which solutions worked well and which did not. Can they improve? Melt the ice faster?
- Have your child brainstorm new ideas and try again. There are many ways to solve a problem!
- Have your child document how they solved the problem (in drawing, photos) and encourage them to share it with other family members.

