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EXAMPLE STEAM INQUIRY



▶ Preschoolers embarked on a design challenge to figure out how to build a road on which cars would not get stuck. To set the context, the preschool teacher read the book *The Little Blue Truck* (Schertle & McElmurry, 2008) in which a truck gets stuck in the mud and friends work together to get the truck unstuck. The teacher told the learners they would be acting as engineers, and engineers have to understand the core science idea of floating and sinking to design roads and highways so that cars and trucks do not get stuck on them.

To begin, the teacher asked the learners to do some investigating about materials that sink or float. After learners determined which objects sink or float (Figure 1.3), the teacher showed them a container with a matchbox car that got stuck on a road made of gelatin. She prompted the learners with the following: "Think about how you can solve this problem of the car sinking on the road." The preschoolers worked in teams to create a gelatin road that allowed the toy car to travel across without getting stuck. Learners could use any of the available materials to add to the gelatin (Figure 1.4). Learners investigated which ingredients would help make their road as strong as possible to protect their car from sinking in the "mud." They tested their prototype to see if the toy car would be able to drive across the gelatin without sinking.

FIGURE 1.3 Preschoolers Testing Different Materials to Determine Which Float or Sink



(Continued)

FIGURE 1.4 Selecting Materials to Create Prototypes



Learners discussed their design, data, and final results in front of the class. Learners made sense of the phenomenon of automobiles sinking in the mud by engaging in the science and engineering practices of asking questions and defining problems, using models, and designing solutions. The focus on mathematics included collecting and considering their data as they made decisions and persevere in getting the truck unstuck.