Scientific knowledge is ultimately about drawing conclusions, and children engage in this process all the time. As explained earlier, they "assimilate" compatible information to confirm existing theories and "accommodate" conflicting information by altering those theories, although not always correctly (Piaget, 1950; 1955). Developmental research shows that preschoolers tend to reason by analogy. They recall a similar experience (comparable materials or events) and generalize to the new situation that confronts them (Russell, Harlen, & Watt, 1989). This may lead to the wrong conclusion, but its roots are traceable to the child's experiences and system of logic. For example, young children may wonder why a dish containing water earlier in the day is now dry. Based on their experience with sponges, they might conclude that the dish has absorbed the water. Or, having seen wet pavement dry in the sun after a rainstorm, preschoolers might reason that the water "floated" up into the air. In other words, their explanations about the natural and physical world make sense given their experience. And they are highly motivated to construct an explanation that resolves what they see with what they already know or believe.

The sand and water table offers children the opportunity to explore the features and processes of the natural and physical world.