



## SAMPLE ITEM FROM SCIENCE AND TECHNOLOGY

### BB. OBSERVING AND CLASSIFYING

Being a good observer is an important skill for budding scientists to develop. Infants and toddlers use all their senses to observe. Preschoolers begin to sort things into categories — big and small, loud and quiet, rough and smooth, to name just a few. They discover similarities and differences in people, objects, and events. Over time, their classifications are based on an increasing number of attributes or characteristics.

#### LEVEL 0

**Child explores objects using different senses.**

**The child observes his or her environment using one or more senses. A variety of sights, sounds, smells, tastes, and textures are all of interest to the child.**

1/15 At choice time, Naomi mouthed a bottle brush from her treasure basket.

6/25 At choice time, Randall rubbed the soft felt ball across his face.

#### LEVEL 1

**Child uses a sound or hand sign to name an object.**

**The child, by making a sound such as “ba-ba” for bottle or “bo-bo” for brother, connects the sound with the object. Thus, the child indicates an understanding that things have names.**

10/18 At nap time, Cheyenne picked up her blanket and said, “Bee-bee.”

3/20 At choice time, looking at the mesh bag of toys hanging above his head, Alvie said, “Moo.” When Crystal (his caregiver) asked, “Do you want the cows to play with?” he nodded and repeated, “Moo.”

## LEVEL 2

---

**Child uses the same word to name more than one object.**

**The child generalizes and may over-generalize category labels, using one label for a group of similar objects, such as applying the word (or sign for) dog to all four-legged animals.**

4/18 At snack time, when Sean was handed his sippy cup of milk, he drank from it and said, “Mmm, juice!”

9/4 At outside time, when Emma saw a squirrel on the playground, she said, “Kitty!”

## LEVEL 3

---

**Child sorts or matches things and may identify things as being the same or different.**

**The child sorts or matches objects and may indicate whether objects are the same or different. The child may say same or different or use other words, such as “These go together” or “That doesn’t belong in this pile.” At this level, the child does not yet explain the reason or state the attribute upon which the sorting is based.**

2/6 During cleanup time, Quon was putting away the dinosaurs when he noticed a block in the dinosaur bin. He took it out and said, “That doesn’t go there!”

9/28 At work time, in the house area, Johanna put red cups by the red plates and blue cups by the blue plates.

## LEVEL 4

---

**Child sorts things based on one characteristic (attribute) and describes the reason.**

**The child categorizes objects based on one shared property (such as size, color, texture, sound) and states what that common property or similarity is. The child may occasionally make an error in sorting, or the properties in one of the child’s subgroups may overlap with those in another subgroup (such as “beads” and “big beads”).**

6/19 At small-group time, Henry took his basket of shells and grouped them into piles of large and small. When Beth (his teacher) handed him another shell, he said, “This goes here, with the small ones. Only the big shells go in this pile.”

4/3 At work time in the toy area, Carrie put all the dogs in one pile and all the cats in the other. She said, “I’m separating them. Cats here and dogs there. Sometimes they like to fight.”

## LEVEL 5

---

**Child sorts based on two characteristics and gives the reason.**

**The child sorts objects based on two properties and states the reason. For example, the child might pick out all the buttons that have four holes and are shiny in a group and explain what he or she is doing.**

8/18 During a field trip to the park, Charles collected stones. He showed them to Saxon (his teacher) and said, “I’m looking for all the small stones that are smooth. I really like them.”

10/6 During work time, in the toy area, Shaneka said, “I want to get all the yellow dinosaurs that can fly. They are going to be my birds.” She picked out all the yellow dinosaurs that had wings.

## LEVEL 6

---

**Child intently or repeatedly observes something and describes his or her discoveries in detail.**

**The child studies an object or event intently and then describes what he or she has observed. To be scored at this level, the child must include multiple details in the description. For example, the child might say of soil that it is different colors, has large and small stones, smells damp, has bugs crawling in it, and is warmer in the sunny areas than the shady ones.**

10/3 At recess, Ezra picked up a leaf, studied it, and said, “This is a maple leaf. I can tell because it has points on it and looks like the hockey team shirts. I like maple leaves the best because they turn colors. See, this one used to be green. Now it also has red and yellow in it.”

12/4 During center time, Naomi looked at a bug in the terrarium with a magnifying glass and compared it to pictures of bugs in a book. She said, “I think this is a beetle” and then made a beetle out of clay with a shell, antennae, and eyes. She used a toothpick to score its legs with hairlike marks.

## LEVEL 7

---

**Child divides a category into sets, divides the sets into subsets, and describes the characteristics of each subset and how it relates to the original category and to the other subsets.**

**The child’s ability to classify encompasses multiple properties and subsets. He or she subdivides objects or events into groups and subgroups, describes in detail what differentiates them, and says how each subgroup relates to the original (overall) category and to the other subgroups. For example, the child might divide living things into plants and animals; subdivide animals into pets, farm animals, and wild animals; and state that a pig can be either a pet or a farm animal.**

6/7 During center time, Tyler filled in a graphic organizer to describe the relationship between the city and the country. He explained that people who live in both need homes. He drew an apartment on the city side and a house on the country side. “But some city people have a house,” he said. Tyler drew streets in the city and trees in the country. “Lots of places have streets and trees, but there’s more plants in the country,” he told Mrs. Swan. In another bubble of the organizer, Tyler compared transportation by drawing cars and people walking in both the city and country. Later he added a bus and a train to the city side.

3/19 During morning work, Erik created a Venn diagram to compare and contrast healthy and unhealthy foods. On the healthy side he drew and labeled eggs, salad, and an apple. On the unhealthy side, Erik drew ice cream and candy. “Look,” he said. “This is apple candy, but it’s not good for you because it’s candy.” In the middle he put a large plate of spaghetti. “It’s good for you, but not if you eat this much,” he said.