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Math Interactive
Learning Experience

Sorting-Categorizing

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Supplies

A box containing various items such as pretend fruit and vegetables, household tools, transportation vehicles, little dolls, articles of clothing, and other small toys. Use something to hold the sorted categories, such as opened manila folders, paper plates, or boxes.

The Activity

The student will sort the objects according to a category that you both decide upon, such as "things we eat," "things we wear," "things we use in the kitchen," or "things we play with."

Variations

- Cut (or have the student cut) pictures of different items such as household appliances, tools, toys, or clothing from old catalogs or magazines. The student can then make collages by gluing different categories of pictures onto a sheet of colored craft paper.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain that these items need to be sorted. Discuss what "to sort" means. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What does it do? What is it used for? Can you find something that would go with it?

Act:

The student sorts the items into different groups. While the student sorts, observe how they do it and ask them to explain their thinking.

Questions: How come you put this item in the group for that category? How do these go together? What if I put this one over here? Tell me what you are doing? Can you find all the things that belong together and put them in this box? How many are in here? Which group has the most?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: How did you sort the different items? What were some of your favorite things to sort? What can you sort at home? What kinds of things does your mom/dad sort at home? Why do you think they do that?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, and counting.

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Supplies

Big and small shapes; big and little blocks; big and little figurines; boxes, paper plates, or string to delineate areas for grouping.

The Activity

The student will sort the items into groups, such as all big shapes, all little shapes, or all circles. Another grouping could be all squares, all yellow shapes, or all people. The student can then compare the different items within the groups.

Variations

- Put all items in one pile and ask the student to choose a dimension to sort by, such as size or color. Discuss the dimension and ask questions during the process.
- Have the student create a picture based on the dimensions chosen for sorting, such as big houses and small houses.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain that the items need to be sorted and discuss how they can be sorted. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What does it do? What is it used for? Can you find something that would go with it?

Act:

The student sorts the items into different groups. Observe how they do it and ask them to explain what is happening.

Questions: Look, this one is big and this one is...? What is the name of this shape? What color is it? How many of these do we have? Good idea. What made you say/do that? Can you think of another way to sort these? How are these two items the same? Different?

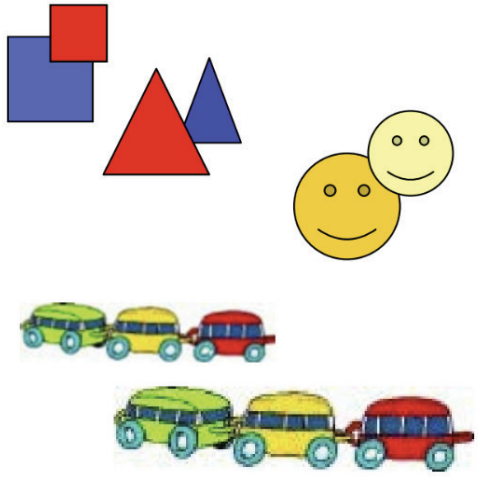
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do? How did you sort these objects? Remember when you first sorted them like this? What did you do afterward?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, and counting.



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Supplies

Counters, red and black checkers, blocks, shapes, buttons, or any other counters. Boxes, paper plates, or string to delineate areas for grouping.

The Activity

The student will sort the items into sets, such as number sets of 1, 2, or 3 bears; sets of blue, red, and yellow counters; or sets of shapes.

Variations

- Ask the student to draw a picture of the sets and explain them to you.
- Have the student play the role of the teacher and explain what kind of sets they want you to make. (Make some "mistakes" and have the student correct you.)

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain that these items need to be sorted and discuss how they can form "sets." Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What could we do with these? What shall we do first? And then?

Act:

The student sorts the items into different groups. Observe how they sort and ask them to explain their thinking. If necessary, model the sorting first by suggesting a category for a set and demonstrating how to do it.

Questions: What kind of set are we making? Where does this one need to go? Can you think of another way to put these counters into sets? How are these sets the same? Different? How many are in this set?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do? What did you learn today? How did you sort these objects? Remember when you first sorted them like this? What did you do afterward?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, and counting.

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Supplies

Pieces of cloth, pieces of colored paper in different colors or textures (such as paint chips or wallpaper samples), sheets of construction paper, glue.

The Activity

The student will sort the scraps into groups using different categories, such as texture, number, shape, or color. Then, they will create pictures by gluing each group onto a sheet of construction paper.

Variations

- Instead of scraps of cloth, have the student sort through magazine pictures and make groups, then glue the pictures onto sheets of construction paper. You can also divide a large poster board into four compartments and have the student glue pictures (or the cloth scraps) in the designated areas.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain the activity and have the student choose the materials they want to use to make the collage. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? How could we sort these to make a collage of different groups? What shall we do first? And then?

Act:

The student sorts the items into different groups. Observe how they do it and ask them to explain what is happening.

Questions: What sort of texture is this (rough, smooth, bumpy, silky)? What kind of group are you making? How are these groups the same? Different? If we put these two groups together, will it be bigger or smaller? Where do we have the most? The least?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do? What did you learn today? How did you sort these scraps? How were your pictures the same? How were they different?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, and counting.

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Sorting-Categorizing

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Supplies

Sorting mat or paper plates; assortment of small items that can be sorted, such as bottle caps, shells, counters, or buttons.

The Activity

The student will sort the items into groups, choosing a category such as texture, shape, or color.

Variations

- Instead of objects, have the student sort through magazine pictures and make groups. Then glue the pictures onto sheets of construction paper.
- You can also divide a large poster board into four compartments and have the student glue pictures in the designated areas.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain the activity and have the student choose the materials they want to use. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? How could we sort these? What shall we do first? And then?

Act:

The student sorts the items into different groups. Observe how they do it and ask them to explain what is happening. Then have the student re-sort the items according to a different category. Discuss the switch with the student to ensure they understand what is happening.

Questions: What kind of group are you making? Where does this one need to go? Good idea. What made you say/do that? How are these groups the same? How are they different? Let's count how many are in this set.

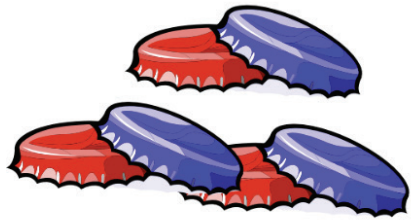
Reflect:

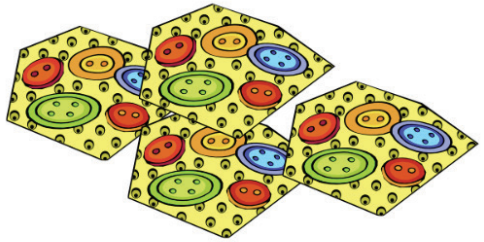
During and after the activity reflect on what the student is doing/has done.

Questions: What did we do? What did you learn today? How did you sort these objects? What could you sort at home (toys, laundry, utensils)?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, and counting.





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Supplies

Assortment of small items that can be sorted, such as bottle caps, shells, counters, or buttons. Ensure you have enough items for several sorts, such as by size, color, texture, or utility. You will also need a sorting mat or paper plates.

The Activity

You and your student will work together. One of you will decide on a category and sort the items without revealing the category. The other will then try to figure out what the secret category is for sorting the objects.

Variations

- Make a record of the categories that were chosen and write down the items that ended up in each category. The student can then create a bar graph[1] of the numbers.
- Each of you can write down the categories you chose on a separate sheet and create bar graphs for each one, then compare the numbers.

Footnote

[1] A bar graph is a graphic means of comparing the amount of something by using rectangles with lengths proportional to the amount of the groups or categories being compared. The do2learn.com website has graph paper you may download for this exercise.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the items and discuss what they are. Then explain the activity and have the student choose who will go first. Ensure the student understands the purpose of the game. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is?

Act:

The student and instructor take turns sorting items according to a secret category.

Questions: What kind of group am I making? Did you figure it out? Okay, where does this one need to go? Good idea. What made you say/do that? How many are in this group? How many more are in this group than in that one? Where do we have the most? The least?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: How did you sort the different items? What did we do? What did you learn today? How did you sort the pictures?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, counting, adding, and graphing.

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Sorting-Categorizing

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Supplies

Sorting mat or paper plates; assortment of small items that can be sorted, such as bottle caps, shells, counters, buttons, paper, coloring pencils, or markers.

The Activity

The student will sort the objects into groups based on a category such as texture, shape, or color, and then subdivide the groups into smaller groups. The student will then make a record of the groups and the number of objects in each group.

Variations

- Instead of objects, have the student sort through magazine pictures and make groups. Then, have the student glue the pictures onto sheets of construction paper. If using one sheet, make a dividing line in the middle or fold it in half. You can also divide a large poster board into compartments and have the student glue pictures in the areas, ensuring that the divisions of the groups are clear.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain the activity and have the student choose the categories for sorting. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? How could we sort these? What shall we do first? And then?

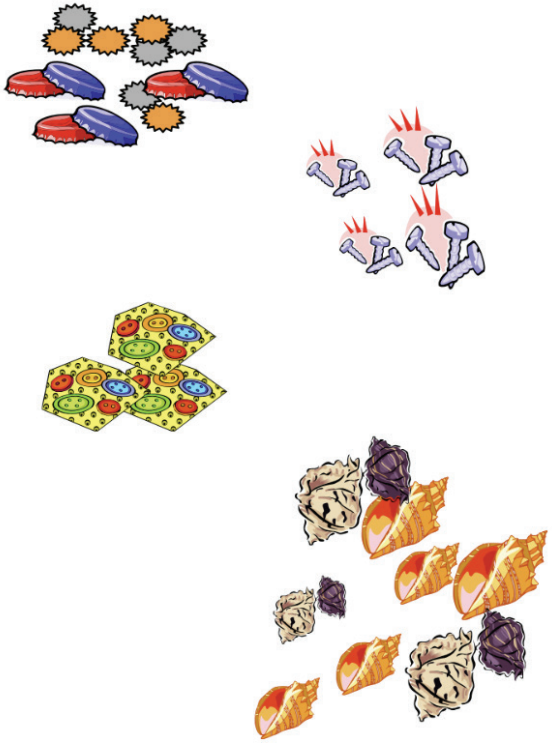
Act:

The student sorts the items into different groups and then subdivides the groups into smaller groups. For example, if one group is buttons, this group could be subdivided into large and small buttons. Discuss the category for subdivision and ensure the student understands what is happening. Next, have the student make a record of the groups and note the numbers. If the student cannot write the words, you can do it, or they can draw a picture of the object.

Questions: What kind of group are you making? Where does this one need to go? How can we divide this group into smaller groups? How many are in this group? How many more are in this group than in that one?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, and counting.



Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do? What did you learn today? How did you sort these objects? What happened to the groups when you re-sorted the objects?

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Supplies

Pictures cut from magazines in several different categories (such as babies, cars, food, or animals), construction paper, glue, and markers.

The Activity

The student will select two categories, such as babies and cars, and find corresponding pictures. Next, they will find pictures that overlap the categories, like babies in cars or baby animals. The student will then glue the pictures onto construction paper and label the categories on top of the picture.

Variations

- On a sheet of construction paper, draw a Venn diagram[1], and together with the student, write in the two different categories and the overlapping category. Then have the student count and place the numbers in the diagram. This may be repeated by choosing other categories.

Footnote

[1] A Venn diagram is a graph that uses circles to represent relationships between groups of sets of items. They can be used to represent inclusion, exclusion, or intersection of the items within the sets..

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the pictures and discuss what they are. Then explain the activity and have the student choose the categories for sorting. Discuss the word "similar." Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? How could we sort these? Can you tell me why you made that choice? What shall we do first? And then?

Act:

The student sorts the pictures into categories. Observe how they do it and ask them to explain what is happening. Then, have them create the picture collage and write the category on top of the page. Next, have the student find pictures that contain both items and make a collage.

Questions: What kind of group are you making? Where does this one need to go? Good idea. What made you say/do that? How many are in this group? How many more are in this group than in that one? Where do we have the most? The least?

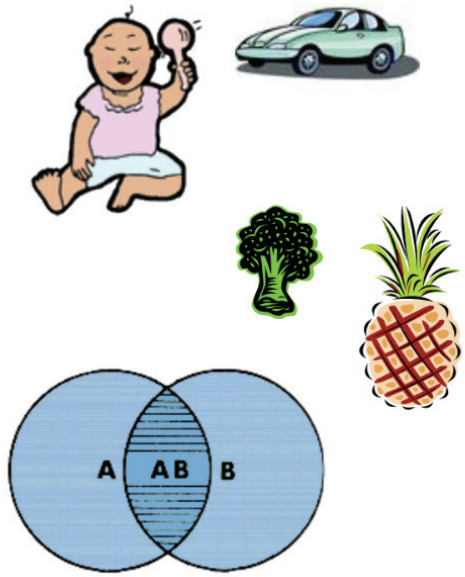
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do? What did you learn today? How did you sort the pictures?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, and counting.



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Sorting-Categorizing

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Supplies

Assortment of small items that can be sorted, such as bottle caps, shells, counters, buttons, or teddy bear counters. Ensure you have enough items for several sorts, such as by size, color, texture, or use. You will also need a sorting mat or paper plates, graph paper, and colored pencils or markers.

The Activity

The student will sort the objects into groups, then perform a second sort of each group according to a different criterion. For example, sort the teddy bear counters by color, then further sort each color group by size, resulting in groups of large, medium, and small bears for each color.

Variations

- Make a record of the categories chosen and list the items in each category. The student can then create a bar graph of the numbers.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the items and discuss what they are. Then explain the activity and have the student choose how to divide the items. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is?

Act:

The student sorts and subdivides the groups.

Questions: What kind of group are you making? How did you decide how to sort? Where does this one need to go? Good idea. What made you say/do that? How many are in this group? How many more are in this group than in that one? Where do we have the most? The least?

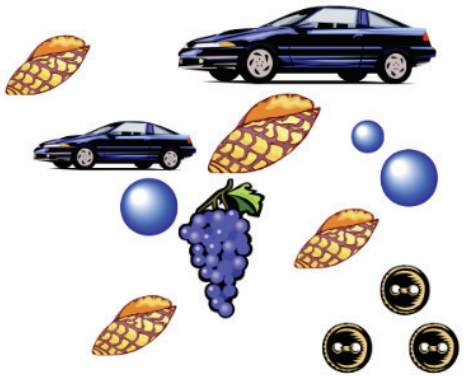
Reflect:

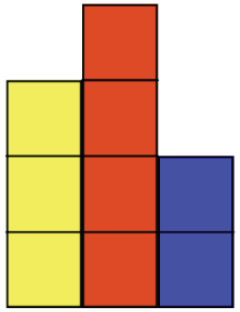
During and after the activity reflect on what the student is doing/has done.

Questions: What did we do? What did you learn today? How did you sort the pictures?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, counting, adding, and graphing.





Footnote

[1] A bar graph is a graphic means of comparing the amount of something by using rectangles with lengths proportional to the amount of the groups or categories being compared. The do2learn.com website has graph paper you may download for this exercise.

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Sorting-Categorizing

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Supplies

Assortment of counters that can be sorted by color (such as cubes, teddy bears, or color chips—use only 2 or 3 colors), bowls or plates for sorting, graph paper, colored pencils or markers, and a sheet with charts for the different groups.

The Activity

The instructor divides the counters into 2 or 3 unequal groups. The student sorts each group by color, ensuring the groups remain separate. The student will then create bar graphs[1] for each group and compare the groups to determine which color occurred the most in each group or which group had the most counters. The student will create a chart to record these findings.

Variations

- Choose different objects, such as plastic animals, which the student can sort into categories (wild animals, zoo animals, domestic animals, etc.). Ask the student to identify overlapping groups (e.g., a zoo animal can also be a wild animal) and have them create a Venn diagram[2].

Footnote

[1] A bar graph is a graphic means of comparing the amount of something by using rectangles with lengths proportional to the amount of the groups or categories being compared. The do2learn.com website has graph paper you may download for this exercise.

[2] A Venn diagram is a graph that uses circles to represent relationships between groups of sets of items. They can be used to represent inclusion, exclusion, or intersection of the items within the sets.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the items and discuss what they are. Then explain the activity and have the student choose how to divide the items. Formulate a plan with the student.

Questions: What do we have here? What do you need to do first/next? What shall we use to do this?

Act:

The student sorts and subdivides the groups, then counts to create the graphs and charts.

Questions: Without counting, which color do you think we have the most of? The least of? Without counting, which group seems to have the most red counters? How can we check that?

Reflect:

During and after the activity reflect on what the student is doing/has done.

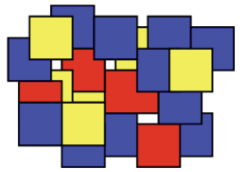
Questions: What did we do? What did you learn today? Look at the bar graph and the chart. Which one tells you how many counters there are? Which one is easier to read? What makes it easier/harder to read the graphs?

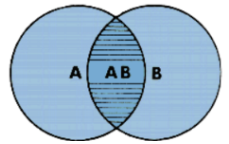
Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, counting, adding, and graphing.

Groups	Color found most often	How many?
1		
2		
3		

Group 1	How many?
red	
blue	
yellow	





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Sorting-Matching

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Supplies

Groups of identical or similar objects, such as toys, blocks, teddy bears, counters, geometric shapes, or socks. (All objects are mixed together in one pile.)

The Activity

The student will create matching patterns of identical objects, such as sock—sock—sock or teddy—teddy—teddy.

Variations

- Have the student start an A-B pattern with similar objects and explain what the pattern is. For example, one doll, one bear, doll, bear... Even though there may be different dolls and bears, the pattern would still be A (doll) - B (bear).

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain that they will line up identical objects and create a pattern. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What can we do with these pieces? Let's make a plan—what shall we do first? And then?

Act:

The student will take one of the objects and start lining up all the same items. When a different object is picked up, start a new line, until all the objects have been lined up into patterns of "same" objects.

Questions: What pattern are you starting with? How are all the things in this line alike? How many pieces are in this line? How did you know that? How can you find out? Look, this one is a big teddy bear, and this is a small one. How come you put them in the same line?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do today? What did you do first? Next? Last? How did you know how to match the pieces? What did you like the best? Which line had the most? The least?

Math Observation Checklist:

This activity will give insight into the student's skills in size, shapes, quantity, sorting, counting, sequencing, position, systematic exploration, correct orientation in space, taking all the available information into account, and attending to relevant details.

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Supplies

Pairs of objects that go together, such as (socks, shoes, comb), (hairbrush, toothbrush, empty toothpaste tube), or (baby doll and bottle). For the initial presentation, mix all the objects together into one pile.

The Activity

The student will create matching sets of objects.

Variations

- Walk through the room and discover things that go together (e.g., door and door knob, lock and key, whiteboard and eraser).

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain that they will make sets with things that go together. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What can we do with these things? Let's make a plan—what shall we do first? And then?

Act:

The student will take one object from the pile and search for something that would go with it to form a set. After all the sets are sorted, break them up again and put one half in a box. Pull out one object at a time and ask the child what goes together with the object and why (same function, similar items). Discuss the words "pair" and "set."

Questions: What goes together with this? How are they alike? How are they different? How many sets do we have? How many objects do we have altogether?

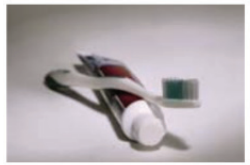
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do today? What did you do first? Next? Last? How did you know how to make sets?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, matching, counting, sequencing, position, systematic exploration, correct orientation in space, taking all the available information into account, and attending to relevant details.



Sorting-Matching

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Supplies

Paper or plastic plates; plastic spoons, forks, and knives; napkins; paper cups; and some play food.

The Activity

The student will work on one-to-one correspondence by setting the table, matching each place setting to a person.

Variations

- Ask the student to serve soup in bowls and set the table again. Discuss why fewer utensils are needed. Compare the number of utensils required for different types of meals, such as meat and potatoes, sandwiches, or finger food.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain that they will set the table. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What can we do with these things? Let's make a plan—what shall we do first? And then?

Act:

Ask the student to draw a picture of each person who will attend the "dinner party." Then place the drawings on the table and ask the student to set the table with the utensils and plates.

Questions: How many place settings do we need? How many objects are in each place setting? How many things altogether? How did you know that? If we have this many people at our party, how many cookies do we need? Why? If one person does not want a cookie, how many cookies do we need?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do today? What did you do first? Next? Last? How did you know how to set the table? How did you know how many plates you needed?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, matching, counting, ordinality, one-to-one correspondence, position, systematic exploration, correct orientation in space, and taking all available information into account.

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Sorting-Matching

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Supplies

Poster board of different colors cut into puzzle pieces; front of a cereal box cut up as a puzzle; simple puzzles; floor puzzles.

The Activity

The student will assemble the puzzle by putting the pieces together.

Variations

- Have the student create a puzzle by making a drawing, then glue it onto poster board and cut it into different-sized pieces. The student will then reassemble the pieces to form the complete picture again.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What can we do with these pieces? Let's make a plan. What shall we do first? And then?

Act:

The student will put together the puzzle. Discuss the strategy to use, such as sorting out all the corner pieces first, then the side pieces, and finally assembling the outline of the puzzle.

Questions: What do you need to look for when you want to find a corner piece? A side piece? How can you tell which pieces fit together (e.g., color, shape)? How many corner pieces do we have? How many side pieces? Do we have more corner pieces or side pieces?

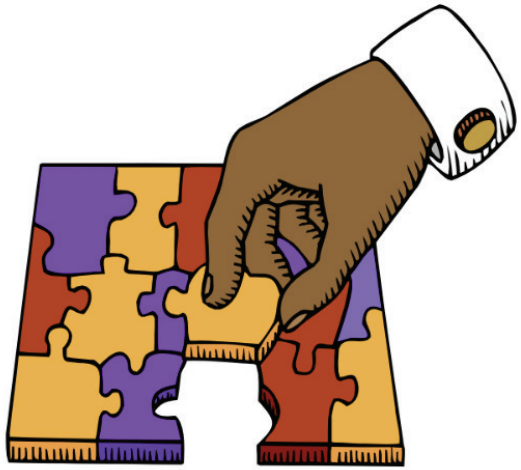
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do today? What did you do first? Next? Last? How did you know how to match the pieces? What did you like the best? What did you do when I asked you?

Math Observation Checklist:

This activity will give insight into the student's skills in counting, sorting, shapes, position, systematic exploration, taking all the available information into account, and attending to relevant information.



MILE
Math Interactive
Learning Experience

Sorting-Matching

Page: 99

Supplies

Several different puzzles with knobs, puzzles with pieces to be fitted in (such as numbers), and large floor puzzles.

The Activity

The student will take the puzzle pieces out and then put them back together.

Variations

- Take two puzzles and mix up all the pieces. Have the student determine where each piece belongs.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What can we do with these pieces? Let's make a plan. What shall we do first? And then?

Act:

The student will take the puzzle apart and decide on a strategy to put it back together, such as matching by the picture underneath or by the shape. Encourage the student to look first and try to determine where each piece goes, rather than relying on trial and error.

Questions: What do you need to look for to find out where this piece goes? How can you tell if it fits? How many pieces are in this puzzle? How did you know that? Which of these two puzzles has more pieces? How can we find out?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do today? What did you do first? Next? Last? How did you know how to match the pieces?

Math Observation Checklist:

This activity will give insight into the student's skills in counting, sorting, shapes, position, systematic exploration, taking all available information into account, and attending to relevant information.

MILE
Math Interactive
Learning Experience

Sorting-Matching

Page: 100

Supplies

Objects to be matched (such as plastic utensils, toy cars and drivers, cups and plates), workmat or construction paper, string, and markers.

The Activity

The student will work on one-to-one correspondence by matching each item with another, describing how and why certain items go together.

Variations

- After matching and categorizing the items, ask the student to determine which category has more or fewer items. Have the student create a bar graph of the categories using markers and graph paper. Then, go around the room and have the student find things that match, asking which category those items would fit into.

Footnote

[1] A bar graph is a graphic means of comparing the amount of something by using rectangles with lengths proportional to the amount of the groups or categories being compared. The do2learn.com website has graph paper you may download for this exercise.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain that they will match objects that go together. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What can we do with these pieces? Let's make a plan. What shall we do first? And then?

Act:

Ask the student to lay out the objects and connect the ones that go together by drawing a line or by placing a piece of string between them. Then, have the student organize the items into categories (e.g., utensils, transportation, or toys).

Questions: How many groups of [category] do we have? How many things altogether? How did you know that? Why do these [items] go together? What if I put this [item] here—how would they go together now? Are there any items that did not match?

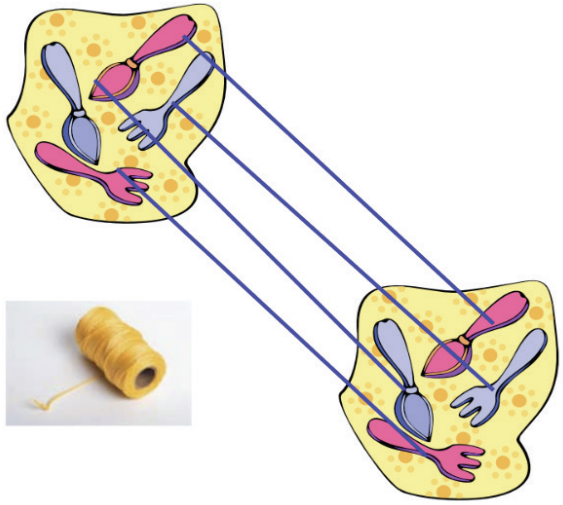
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did we do today? What did you do first? Next? Last? How did you know which items to match?

Math Observation Checklist:

This activity will give insight into the student's skills in sorting, categorizing, matching, counting, ordinality, one-to-one correspondence, systematic exploration, correct orientation in space, taking all available information into account, and attending to relevant details.



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Math Interactive
Learning Experience

Sorting-Categorizing

Page: 101

Supplies

Small paper plates, cookies, M&M candies, crackers, raisins, or play food. Ensure to check with the caregiver if the student is allowed to eat candy.

The Activity

The student will count out candies (or cookies) and determine which plates have more, less, or the same amount of candies, cookies, or food.

Variations

- Use animal-themed paper plates and counters. Ask the student to pretend the counters are food for the animals and feed the animals. If the animal is a large one, ask the student to feed it more than the small ones.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain the activity. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is?

Act:

The student will count the candies on each plate and determine which one has more or less. Invite the student to add more candies to a plate and observe what happens.

Questions: Which plate has more candies than this one? Can you see a plate with one candy? Two candies? More candies? Which plate has fewer candies? How many are on these two plates altogether? Which one has the most? How did you know that? How can you find out?

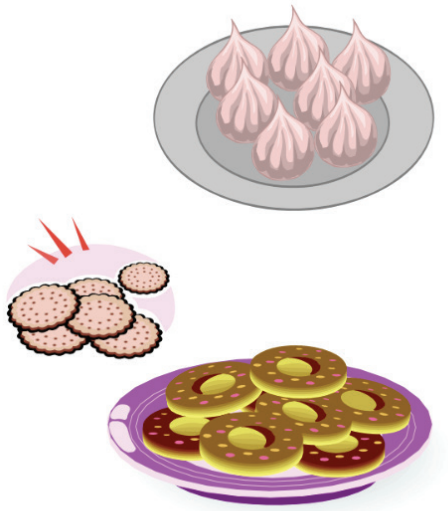
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did you do to make more candies on a plate? Fewer candies? What happened when you added candies? When you took some away?

Math Observation Checklist:

This activity will give insight into the student's skills in counting, quantity, cardinality, conservation, systematic exploration, taking more than two pieces of information into account, and attending to relevant information.



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Math Interactive
Learning Experience

Sorting-Same/Different

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Supplies

Workmat with two areas and small items such as beans, counters, shells, buttons, and bottle caps.

The Activity

The instructor and the student will work as a pair, matching the items on each side of the work mat. The items matched do not need to be identical but should match in quantity.

Variations

- Instead of a work mat, use bowls. The student and instructor take turns dropping a small item into a bowl while counting. After dropping a few items, ask the student how many are in each bowl. Then count to check if they were right.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain the activity. Formulate a plan with the student.

Questions: hat do we have here? Can you tell me what this is? What do we need to do first? Next?

Act:

Whe student and instructor take turns lining up and matching the counters.

Questions: How many counters do you have? How many do I have? Does anyone have more? Less? How did you know that? How can you find out? How can you make your side have more than mine? What did you just do?

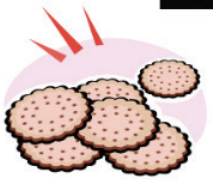
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did you do to make more? Less? What happened when you added counters? When you took some away?

Math Observation Checklist:

This activity will give insight into the student's skills in counting, quantity, cardinality, conservation, systematic exploration, taking more than two pieces of information into account, and attending to relevant information.



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Learning Experience

Sorting-Same/Different

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Supplies

Counters with different colors on each side, bottle caps, numeral cards or number dice, 1-inch graph paper or graph mats, and a cup or bowl.

The Activity

The student will roll the number die or select a number card and place that number of objects in a cup or bowl. They will then empty the bowl and place each counter in one of the columns on the graph mat based on its color or which side came up. Ask the student to identify which column has more, less, or the same.

Variations

- Instead of using a work mat, use 1-inch graph paper and have the student record the numbers by making bar graphs with colored markers.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain the activity. Formulate a plan with the student.

Questions: what do we have here? Can you tell me what this is? What do we need to do first? Next?

Act:

The student mixes up the items in a cup or bowl and empties it. They count how many fell one way (e.g., upside down) and place those items in one column of the graph mat. The remaining items are placed in the other column, ensuring they line up. Repeat this process several times.

Questions: How many counters landed upside down? Upside up? Which side has more? Less? How did you know that? How can you find out?

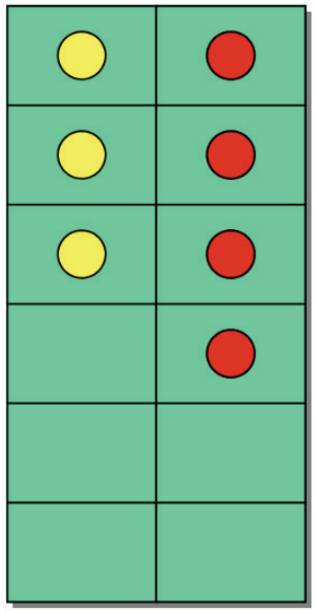
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: What did you do to make the graph? What happened when you emptied the cup again?

Math Observation Checklist:

This activity will give insight into the student's skills in counting, quantity, cardinality, conservation, sequencing and planning, systematic exploration, taking more than two pieces of information into account, and attending to relevant information.



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Learning Experience

Sorting-Same/Different

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Supplies

Counters, bottle caps, popsicle sticks, markers, construction paper, and work mats.

The Activity

The instructor and student will work together, each laying out a set, such as a set of bottle caps and a set of popsicle sticks on a large sheet of construction paper. The student will then match the sets by drawing lines between one object in one set and one in the other.

Variations

- Use small objects for counters and have the student draw two handfuls. Ask the student to estimate which handful has more and check the estimate by counting or lining up the objects with a one-to-one correspondence.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to get acquainted with the objects by touching and discussing what they are. Then explain the activity. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What do we need to do first? Next?

Act:

The student and instructor create sets, and the student determines which set has more, less, or the same amount.

Questions: How many counters are in your set? How many in mine? Which set has more? Less? How do you know that? How can you find out?

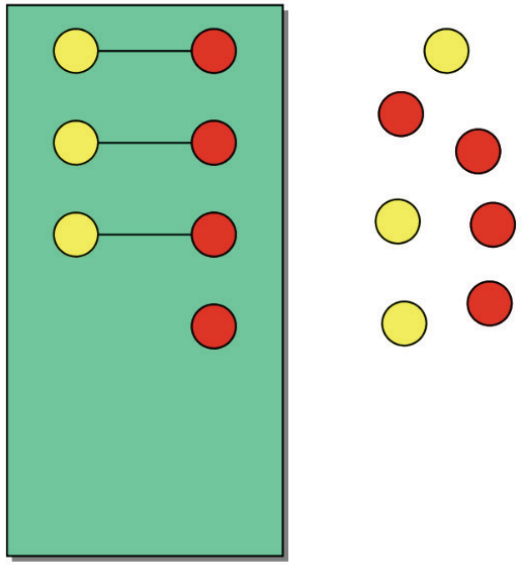
Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: How did you know which set had more? How could you tell if there were the same number in each set? Different?

Math Observation Checklist:

This activity will give insight into the student's skills in counting, quantity, one-to-one correspondence, cardinality, conservation, sequencing and planning, systematic exploration, taking more than two pieces of information into account, and attending to relevant information.



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Math Interactive
Learning Experience

Sorting-Same/Different

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Supplies

Pictures cut from old catalogs or magazines, construction paper, markers, scissors, and glue sticks.

The Activity

The student will find pictures that go together, such as cars and garages, and glue them onto construction paper. The student will connect each pair by drawing a line between the two pictures. They will choose several categories and create different pictures, then compare the pictures to determine which has more, less, and what is the same.

Variations

- Use small toys instead of pictures and line up the ones that go together. Discuss why they go together and how they are the same or different. Help the student understand that a set can be the same because of the number of items and different because of the kind, color, or shape of the items.

Focus:

Encourage the student to focus their attention on the task at hand. Allow the student to choose the pictures and explain the activity. Formulate a plan with the student.

Questions: What do we have here? Can you tell me what this is? What would go together with this to make a pair? What do we need to do first? Next?

Act:

The student glues the pictures, connects the pairs, and determines which has more, less, or the same.

Questions: How many pairs are in this picture? How many in that one? Which one has more? Less? How do you know that? Show me something that is the same. How can you find out?

Reflect:

During and after the activity reflect on what the student is doing/has done.

Questions: How did you know which picture had more? How could you tell if there were the same number in each set? Different?

Math Observation Checklist:

This activity will give insight into the student's skills in counting, quantity, one-to-one correspondence, cardinality, conservation, sequencing and planning, systematic exploration, taking more than two pieces of information into account, and attending to relevant information.