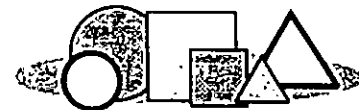


Objective:

Sort objects and shapes, using one or two attributes.



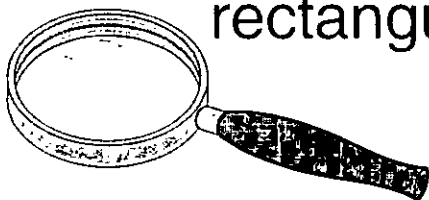
Representation:

Materials: attribute blocks, overhead spinner, blank spinner mat.

- Create a spinner mat with the following regions: more than 3 corners, large, thin, (and a very small region which reads 'select any shape').
- Play this game with a partner. Create a set of any 11 attribute blocks placed in a pile between two players.
- The first player twirls the spinner and takes one shape of the type identified by the spinner (assuming there is one).
- Play passes to the second player who likewise tries to claim a block from the pile.
- Players continue taking turns and claiming blocks until all blocks are taken. The player with the most blocks wins.



How many objects in the room can you find which are both blue and rectangular?



STRATEGY: *Make a List*

ANSWER:

Answers vary.

adaptations:



Twirl the spinner to identify a single attribute. Sort all attribute blocks into two piles — those which display that attribute and those which do not.



Make a second spinner mat with each region showing one color.

Play the game described above, but players must spin one attribute from each spinner mat before claiming a block.

• *Writing Corner:* •••••

In the game above, what is the hardest piece to remove from the set? Why?



Objective:

Identify attributes and rules in presorted shapes.



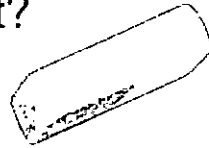
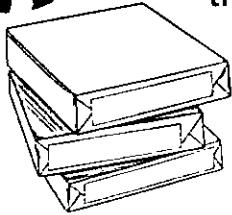
Representation:

Materials: attribute blocks, string.

- Work with a partner.
- First partner creates a loop with the string. This player silently decides upon a rule for sorting the blocks (e.g., “only squares”).
- This partner now adds one block to the set in the string loop. The second partner guesses what the rule is for sorting the blocks. If incorrect, the first partner adds another block, and the second partner makes another guess.
- This process continues until the second partner guesses, correctly at which time the partners begin again, switching roles.



Sharon created a set of objects that included a ball, bat, guitar, glass, paper, and eraser. Sharon said that none of these objects fit her rule: clock, spoon, and desk. Can you give a rule to fit Sharon’s set?



STRATEGY: *Guess & Check*
ANSWER:

There may be a variety of possible solutions, but the names of each of the items in the set contains the letter ‘a’.

adaptations:

Adapt the game above by using a spinner mat to determine the rule used by the first player. This effectively limits the number of choices from which the second player must select.



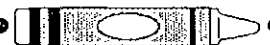
Short the shapes using two criteria.

Player two must identify both criteria in order to guess correctly.

For example, the criteria may be thick and blue.

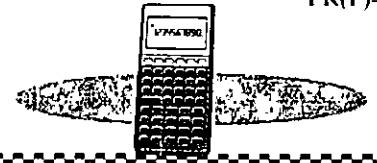
Writing Corner:

Make a list of 10 objects all of which have something in common. Write a sentence to explain what they have in common.



Objective:

Identify and describe patterns, including numerical and non-numerical patterns.

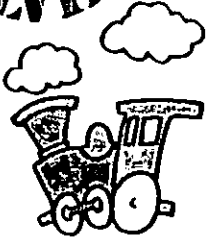


Representation:

Materials: 100 chart, pencil crayon, calculator.

- Start with zero in your calculator. Generate your pattern by repeatedly adding 3 to the value on your calculator.
- Color on your 100 chart each number which the calculator displays.
- Repeat until you reach or pass 100 (or until you can guess the pattern and finish coloring the remaining boxes on your chart).
- Write a description of the pattern on your 100 chart.
- Repeat with a new 100 chart, but add 2 each time.
- Repeat with a new 100 chart, but add 5 each time.
- Repeat with a new 100 chart, but add 9 each time.
- Repeat with a new 100 chart, but add 1, then 2, then 1, then 2

PROBLEM SOLVING



If you create a train (along the edge of a metre stick) of a white and a blue counting rod repeated over and over, you can make a train exactly 50 cm long.

What other sets of two different rods can be used to make trains exactly 50 cm long ?

STRATEGY: *Make a List*

ANSWER:

The following sets of rods will work:
white + blue, red + brown, light green + black,
dark green + purple, white + purple,
red + green.

adaptations:



Color one row of your 100 chart. Describe the pattern in that row.

Color one column of your 100 chart. Describe the pattern in that column.



Predict: using the number board as described above, what pattern would you see if you add 5, then 6, then 5, then 6, and so on.

Check and see!

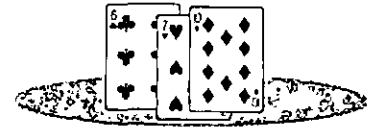
Writing Corner:

Make a list of 5 patterns you see on your 100 chart. Give an example of each.



Objective:

Create, extend and describe patterns including numerical and non-numerical patterns.



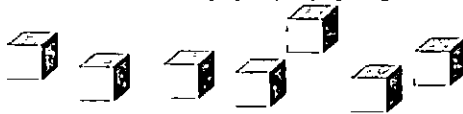
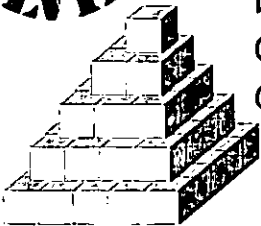
Representation:

Materials: deck of cards.

- Play this game with a partner.
- Take any red card and any black card from the deck laying them face up on the table. These two cards are the start of a pattern (red, black, red, black, red ...). Split the remaining deck into two equal parts, and give one to each player.
- Players now take turns drawing the top card from their pile and playing it on the pattern already started (if it fits the pattern).
- If it does not fit the pattern, the card is returned to the bottom of that player's deck.
- The first player to play all of his/her cards on the pattern wins.
- *Adaptation:* Play the same game, but alter the pattern. For example:
 - red-red-black-black
 - spade-heart-diamond-club

PROBLEM SOLVING

Jonas started with 7 blocks in his bucket. On the first day he added one block, on the second day two blocks, on the third three blocks and so on. On which day had Jonas collected 100 blocks?



STRATEGY: Act it Out
ANSWER:

On the 14th day Jonas had a total of 112 blocks in his bucket.

adaptations:

Have students work on their own. First sorting the cards (all reds in one pile, all blacks in another).

Now have students build a pattern by drawing one card from each pile laying them on the table in turn.

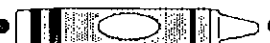


Play the same game as above, but give one player all the red cards and one player all the black ones.

Each player plays one card to start the pattern (e.g., a six followed by a 9). This pattern of digits (6 and 9 in our example) must now be repeated until one player has successfully played 3 more cards.

Writing Corner:

Our world has many patterns. Look around your classroom and describe one pattern you see.



Objective:

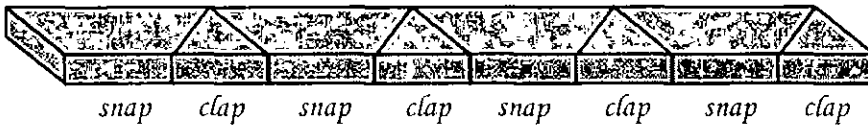
Translate patterns from one mode to another: manipulatives, diagrams, charts, calculators, words, symbols.



Representation:

Materials: paper, pencil, pattern blocks, 100 chart, crayon.

- Make a chart of the different pattern blocks, listing one of the following activities beside each type of block: blink, wink, snap fingers, tap toe, clap, touch nose.
- Now make a pattern with any 2 pattern blocks and then act it out. For example,



- Draw your pattern on a piece of paper. Write the actions under each block.
- Now write the color under each block. Now pick a different letter for each type of block and write that letter under each one.

PROBLEM SOLVING

Jarrod created a train of pattern blocks that looked like this:



What color was the 40th block?

STRATEGY: *Make a Model*
ANSWER:

The 40th block was blue.

adaptations:



Limit the number of pattern block shapes to 3, and repeat the activity above.

Later, increase the number of shapes to 4, then 5, etc. Write the activity on the block itself.



Assign a value to each block as follows: white (1), green (1), blue (2), red (3), orange (4), yellow (6).

Create a pattern using 2 kinds of blocks. Use a calculator to add up the value of each block coloring the sums as you go on your 100 chart.

Describe any patterns you see.

Writing Corner:

In your own words, what is a pattern? Give two examples and tell why they are patterns.

