## Understanding Conceptual Reasoning

## Features of the Images Presented;



## Rules;

The object of this exercise is to identify a "Set" of three images from 9-12 images laid out on the screen. Each image has a variation of the following four features:
(A) Color: Each image is red, blue, or yellow.
(B) Shape: Each image contains ovals, rectangles, or diamonds.
(C) Number: Each image has one, two, or three symbols.
(D) Fill: Each image is solid, open, or shaded.

A "set" consists of three images in which each of the features, looked at one-byone, are the same on each image or are different on each image. All of the features must separately satisfy this rule. In other words: shape must be either the same on all three images or different on all three images; color must either be the same on the three images or different on all three; shading must either be the same on all three images or different on all three; and number must either be the same on all three images or different on all three.

If only 2 of the 3 images are the same (or different) in any feature, then it is not a "set".

For example, the following are "Sets":


All three images are blue; all are diamonds; all have two shapes; and all have different fills. They are all the same on three features, and all different on one.


All have different colors; all have different shapes; all have different numbers of shapes; and all have the same fill. They are all different on three features, all the same on one.


All have different colors; all have different shapes; all have different numbers of shapes, and all have different fills. They are all different on all features.

The following are not "Sets":


All have different colors; all are diamonds; all have one shape; however, two are open and one is not.


All are rectangles; all have different fills; all have two shapes; however, two are red and one is not.

The Rule of Sets: If two are... and one is not, then it is not a "Set".

See the various ways that a set can be made with color and number, with shape and fill held constant.


This display depicts the various ways that a set can be made with fill and number with color and shape held constant.


This display depicts the various ways that a set can be made with a combination of similar and different features. Horizontally, fill and number are different. Vertically, color and fill are different. Horizontally, either number and color are different or number and fill are different.


This display depicts the various ways that a set can be made with a combination of similar and different features. Horizontally, color, shape, fill and number are all different. Vertically, color, shape and fill are different and number is the same. The diagonals also show set variations.


Now look at these screen shots from the program. Can you see the two possible sets?


My score : 0 Points
Here is one set.


My score : 0 Points

Here is the second set.


Here is the next screen shot. Can you see the two possible sets?


My score: 3 Points

Here is the first set.


My score : 3 Points

Here is the second set.


Here is the next screen shot. Can you see the three possible sets?


My score : 6 Points

Here is the first set.


My score : 6 Points

Here is the second set.


Here is the third set.


Here is the next screen shot. Can you see the four possible sets?


Here is the first set.


Here is the second set.


My score : 9 Points

Here is the third set.


Here is the fourth set.


Here is the next screen shot. Can you see the two possible sets?


My score : 12 Points

Here is the first set.


My score: 12 Points

Here is the second set.


Here is the next screen shot. Can you see the three possible sets?


My score : 15 Points

Here is the first set.


My score : 15 Points

Here is the second set.


Here is the third set.


Here is the next screen shot. Can you see the three possible sets?


Here is the first set.


Here is the second set.


My score : 0 Points

Here is the third set.


My score : 0 Points

Here is the next screen shot. Can you see the three possible sets?


Here is the first set.


My score : 3 Points

Here is the second set.


My score : 3 Points

Here is the third set.


Here is the next screen shot. Can you see the two possible sets?


My score : 6 Points

Here is the first set.


My score : 6 Points

Here is the second set.


Here is the next screen shot. Can you see the two possible sets?


My score : 9 Points

Here is the first set.


My score : 9 Points

Here is the second set.
Conceptual Reasoning Level 6

