## **Colored Dots 2** Task Information

Grade: 4th Grade

Content: Physical Science

IC1.14 - Mixtures

Format:

Manipulative

Purpose:

To determine the student's understanding of mixtures

To determine the student ability to make inferences based on data collected in an experiment

Skills:

observing, interpreting data Primary:

Secondary: generalizing/inferring, recording data,

Time: 8 - 10 minutes

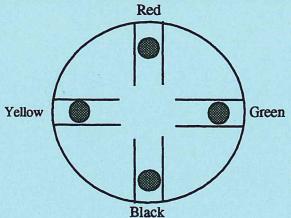
#### Materials:

#### Teacher

- 1 yellow water soluble marker
- 1 green water soluble marker
- 1 black water soluble marker
- 1 red water soluble marker
- filter paper, 9 cm diameter
- scissors
- 1 thin line black permanent marker
- extra prepared filter papers
- extra paper towel

## Preparation:

Cut paper with 4 tabs (about 1 cm x 3 cm) as shown in the illustration. Place a different colored dot about 1 cm from the end of each of each tab. All dots should be made with water soluble markers.



## Per Student

- 1 5 oz. clear plastic cup of water
- 1 filter paper with colored dots
- paper towel

2. On the clear plastic cup, draw a thin line with a black permanent marker all the way around the cup about 4 cm from the bottom of the cup.

3. The line will serve as a fill line for the water. The tabs from the filter

paper should just reach the top of the water line.

4. You may have to adjust the tab cuts on the filter paper or the fill line on the clear glass.

Safety: N/A

#### **Extensions/Modifications:**

Colored Dots 1 and 3 are similar to this task.

#### Credit/Source:

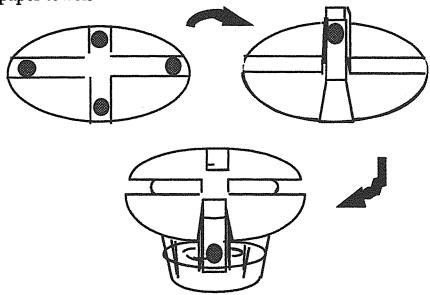
Elementary Science Syllabus Level I Supplement - p. 80

## Colored Dots 2

<u>Task:</u> At this station you will be observing the effect of water on three dots of different colors.

#### Materials:

- 1 filter paper with colored tabs
- 1 cup with water
- paper towels



## Directions:

- A. In front of you are a small cup of water and a piece of cut filter paper.
- B. Bend the tabs with colored dots upward as shown in the diagram.
- C. Next, turn the paper upside-down and place the four tabs into the small cup. Be sure the colored dots are <u>above</u> the water surface, but be sure that each of the tabs is <u>touching</u> the surface of the water.

## DO NOT LIFT THE CUP!

D. After about 1 minute, when the first color reaches the top of the tab, remove the paper and flatten it out on a paper towel.

Please Continue on the Next Page

1.	Describe what you observed about each dot.  A. Black dot
	B. Green dot
	C. Yellow dot
	D. Red Dot
2.	Explain why the black dot acted the way it did.

# Colored Dots 2 - Scoring Rubric Maximum Score - 5 points

#### 1A & B. Observations of dots

2 points total

Standard; The student describes what happens when water reaches each dot.

#### Criteria: Black dot and Green dot

• 1 point for each reasonable description of movement or change in color.

## Acceptable descriptors for movement:

climbed up

absorbed to the top

smeared

moved

spread out

moved upward

smudged

• ran

got bigger

touched the top

raised

blurred

color went up

reached the top

moved off the circle

Acceptable descriptors for color change:

· changed color

list of colors formed

#### 1C. & D Observations of dots

2 points total

Standard: The student describes how the yellow dot changes.

#### Criteria: Yellow dot and Red dot

- 1 point for each reasonable description of movement.
  - See acceptable descriptors for movement above.

## Acceptable descriptors for color change:

fades

gets lighter

color thins out

no change in color

\*\*\* No credit is given if the student <u>only</u> states the dot changed or didn't change \*\*\*

# 2. Reason why black dot acted the way it did

1 point total

Standard: The student explains why the black dot acted the way it did.

## <u>Criteria</u>

• 1 point if the student explains that black is a mixture of many colors or water will separate them.

## Acceptable answers:

- Black is a mixture (made up) of many colors.
- The black marker was washable (water soluble).
- All colors are part of black.
- Water separates the colors in black
- Water makes the colors in black run

\*\*\* No credit is given if the student only restates the observations made in question 1. \*\*\*

<sup>\*\*\*</sup> No credit is given if the student only states the dot changed. \*\*\*

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Male / Female (circle one)					
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B. Green dot		(	0	1	
C. Yellow dot		(	0	1	
D. Red dot		(	0	1	
2. Reason why black dot acted the way it did		(	0	1	
Total	Score				
7	otal possil	ole score	<b>;</b> -	5 points	
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					3
11 0	Student ID 4C-5M-16	Scoring	Form -	Colored	Dots 2
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	B. Green dot		0	1	
	C. Yellow dot		0	1	
	D. Red dot		0	1	
	2. Reason why black dot acted the way it did		0	1	
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	C. Yellow dot		0	1	
	D. Red dot		0	1	
	2. Reason why black dot acted the way it did		0	1	
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		Total possib	le score -	5 points	<del></del>

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5.	Describe what you observed about each dot.  A. Black dot  OUT	#1
	B. Green dot H MMX WHA RESENTATION YOUW	nchinaeon (min o gravitik kirok v. n
	C Vellow dot	
	itmixwith Fed	
	D. Red Dot Sayed the Same	
б.	Explain why the black dot acted the way it did.  The Bort color and Huas	
	the ohy partcoler.	

4C-SM-16 #2 Describe what you observed about each dot.

•	Des	cribe w	nat you	observed	about	ea
	A.	Black	dot			

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7-1	J	1 ,					
_a 1:4	b. '4 €	t ou	9/01				

## B. Green dot

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9	- V	l			

### C. Yellow dot

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F. J.	~~~	

## D. Red Dot

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9	J	——————————————————————————————————————	7	

# 6. Explain why the black dot acted the way it did.

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			7					

April 30, 1996 2
5. Describe what you observed about each dot. $4C - DE -$
A. Black dot
it turned a light and dock frown purple
and blue
B. Green dot
it turned where
C. Yellow dot
it stayed yellowish orange
D. Red Dot
it turned a peach
6. Explain why the black dot acted the way it did.
- · · · · · · · · · · · · · · · · · · ·
because the color block is made up of
different colors