

# PARENTS' & TEACHERS' **GUIDE** to the **Mirror-ACULOUS Art Activities Kit** by

There's a lot of brain tickling, giggly fun in the Mirror-acious Art Activities Kit. And there's a lot of opportunity for learning, too: an engaging introduction to optical physics, fascinating facts of history, and unique eye-hand challenges. The goal of this Guide is to help you get the most play, educational, and diagnostic value from the Kit.

The activities are not strictly sequential. Some children are most comfortable starting on page 1, while others select pages at random. Some choose to crayon while looking at the cup; others enjoy the surprise of coloring the morph, then decoding the image. The "oohs" and "ahhs" increase if children look at a morphed image first, before seeing its reflection on the cup.

Exploration is a natural response to the informal structure. Challenges are fun to get right and funnier to get wrong. "Mistakes" supply useful information for other pages. Every style of investigation of the magic of anamorphosis is valid and encouraged.

Numerous national awards proclaim the Kit's educational excellence. Teachers use the Kit in activity centers to encourage problem-solving, to spark inquiry, imagination and creativity. Specialists and occupational therapists utilize the activities to reach visual learners, to re-stimulate interest, and to assess fine motor skills.

## **COPY THE ACTIVITY PAGES**

You have our permission to reproduce all 32 activity pages in the Kit. We recommend that **TEACHERS** also purchase **Item #34342-T-1**, a **Group Pack** containing 30 other morphed images plus 30 mirror decoder cups. The combination will supply a classroom with 62 activity masters and 32 mirror decoders all for about \$40.00. **PARENTS**, add to your child's collection. Join the **Morph Club**. Receive 2 more cups, 16 more crayons, a link to 10 more Mirror-acious morphs to download and print at home and a **Morph-A-Month** for a year - for only \$6.50.

## **HOW TO USE THIS KIT**

The pink sheet in the Kit provides easy instructions in English, Spanish and French. Every activity page bears a letter (A through G) in the lower left corner. Letters correspond to types of activities described below. Some pages have additional directions. Following the basic list here, are further suggestions for optimizing the activities.

- A. SIMPLY AMAZING – Coloring. Plain & Simple? (Pgs 1, 2, 4, 5, 8, 10, 11, 13, 14, 16, 17, 20, 25, 27, 28, 29)
- B. CONNECT THE DOTS – Dots guide your lines. (Pages 3, 12, 18, 23, 24)
- C. YOU'RE THE ARTIST – Complete the drawing. (Pages 6, 15, 21, 22, 25, 30, 31)
- D. AMOOZING MAZES – Get from here to there. (Page 19)
- E. COLOR ●● SPACES – Fill in only the areas that have two ●● dots. (Pages 9, 26)
- F. SLANT ART – Raise activity page to eye level. Look across foreshortened page to decode image. (Page 31)
- G. SLIDERS - Pull activity page slowly toward you, stopping every half inch, to see inventor age. (Page 32)

## **SUGGESTIONS**

### **HISTORICAL PERSPECTIVE**

Amaze your students: The "an-a-morph-o-scope" (this toy) - was actually invented over 500 years ago, about the time that Columbus crossed the ocean! Some morphs took more than a year to paint. And mirrors even smaller than a CD were so expensive that only wealthy people could afford them.

For the middle grades and up, OOZ & OZ has a **PowerPoint Presentation** that delves deeper into the history and mystery of anamorphoscopes and mirrors – a true tale replete with spies, intrigue, and even murder. It is available free with our unique custom **Fundraiser Program**.

## **PREDICTING** (Pages 18, 7, 11 )

### Page 18 (Christmas tree)

Hold up page 18 before using the mirror decoder to reveal its reflection. Ask, "What shape do you think this will make when we un-morph it?" After the reflection is revealed, invite the children to decorate the tree.

### Page 7 (tiger cage)

Hold up page 7. Some children will have started to make the mental adjustment and may see the tigers, but the cage usually astonishes because all of the radial lines in the morph become perfectly upright bars in the reflection! Let them see the reflected image. Ask them to express what happened. Remove the activity page and repeat the process slowly.

### Page 11 (circus tent)

Hold up page 11. The morph looks like concentric circles surrounding a small animal. The reflection reveals an elephant under the big top. Alternating color stripes reinforces learning.

## **REASONING** (Pages 3, 12, 18, 23)

### Pages 3, 12, 18

Dotted curved lines on these pages will reflect as straight lines. The direction of the dotted curved lines (horizontal, vertical, diagonal) and their placement (center, lower left, etc.) varies. To stimulate deductive reasoning have students compare positions of the lines on the pages to their reflections.

### Page 23 (the plus sign)

Here one must connect four dots to reflect as a perfect plus sign. Connecting dots 1 to 1 to form the vertical line of the plus sign is easy. Connecting dots 2 to 2 to reflect as the horizontal bar of the plus sign is not. The task tries to lure people into drawing a straight line through three adjacent dots. Linking these three dots, however, reflects as an upturned arc. People who possess certain spatial intelligence and logic can resist this attraction. They properly connect the dots by drawing an arc that passes through the middle of the vertical line. People without these skills are utterly stymied.

Connecting the three adjacent dots does not solve the plus sign task, but it does provide the "smile" for a happy face. Now position the cup on a piece of blank paper. Place a crayon horizontally at the base of the cup to create a "smile" in the reflection. Ask children to finish drawing the happy face. Encourage them to look at the mirror decoder and add even more details such as ears, hair, etc.

## **DRAWING** (Pages 6, 15, 21, 22, 30, 31)

### Page 6

The clown needs a face. It's a clown. There is no right or wrong.

### Page 15

A section of the trombone slide is missing. Freehand drawing is needed here.

### Page 21

Connect the ends of the tightrope before the tightrope walker steps off into thin air!

### Page 22

Anything goes. Create the rest of the clown's costume.

### Page 30

This page asks for a simple, normal drawing in the small square grid.

### Page 31

This page has a warped grid for changing the normal drawing into the morph.

## **AFTERWARD** (Pages 4, 7)

### Page 4

Morphs are circular for cylinder and cone reflectors. That means that the corners of the activity pages are left empty. On this page radial lines were added afterwards in the corners to suggest circus tent peaks.

### Page 7

On this page lines were extended afterward to enhance the drama of the morph.

## **VOCABULARY:**

anamorphoscope, morph, spies, slant art, vertical, horizontal, diagonal, centered, concentric, radial