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**hand2mind 91486**

# Rainbow Angle Circles User Manual

Model: 91486

Brand: hand2mind

## INTRODUCTION

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The Rainbow Angle Circles set is a comprehensive educational tool designed to help students visualize and understand fundamental concepts of angles and geometry. This set provides a hands-on approach to learning, making abstract mathematical ideas tangible and accessible. It is suitable for children aged 8 and above, aligning with curriculum stages where angle concepts are introduced.

The set includes a variety of color-coded circular pieces, each representing different angle measurements, allowing for interactive exploration of angle properties, fractions, and geometric relationships.

## PACKAGE CONTENTS

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Figure 1: The Rainbow Angle Circles set in its packaging, showing the 36 pieces and "Getting Started Activities" guide.

Your Rainbow Angle Circles set includes the following components:

- One (1) 360° red full circle.
- One (1) 180° pink circle, divided into two semicircles.
- One (1) 120° orange circle, divided into three sectors.
- One (1) 90° yellow circle, divided into four sectors.
- One (1) 60° green circle, divided into six sectors.
- One (1) 45° blue circle, divided into eight sectors.
- One (1) 30° black circle, divided into twelve sectors.
- An instructional guide with getting started activities.

All circular sectors are made from durable, high-quality rigid plastic. The individual sectors of each circle are joined on the back with an adhesive to keep them together when not in use, facilitating easy storage and preventing loss of pieces.

## SETUP AND PREPARATION

The Rainbow Angle Circles set requires minimal setup. Upon unboxing, ensure all pieces listed in the

"Package Contents" section are present. The pieces are ready for immediate use. No assembly is required.



Figure 2: All the colorful angle circle pieces, including the full 360-degree circle, 180-degree halves, and various segmented circles, laid out for use.

It is recommended to use the set on a flat, stable surface to allow for easy manipulation and arrangement of the angle pieces.

## OPERATING INSTRUCTIONS AND ACTIVITIES

The Rainbow Angle Circles are designed for hands-on learning of various mathematical concepts. The following sections outline key activities and lessons that can be conducted with the set.

### 1. Understanding Angles and Fractions

This activity helps students understand that a full circle represents 360 degrees and how different angle pieces relate to the whole as fractions.

- Begin by identifying the 360° red full circle.
- Introduce other colored circles and their corresponding angle measurements (e.g., 180° pink, 90° yellow).
- Discuss how each segment represents a fraction of the whole circle (e.g., 180° is  $\frac{1}{2}$  of 360°, 90° is  $\frac{1}{4}$

of  $360^\circ$ ).

- Use the pieces to visually demonstrate these fractional relationships:
  - $180^\circ = \frac{1}{2}$
  - $120^\circ = \frac{1}{3}$
  - $90^\circ = \frac{1}{4}$
  - $60^\circ = \frac{1}{6}$
  - $45^\circ = \frac{1}{8}$
  - $30^\circ = \frac{1}{12}$



Figure 3: A visual representation of understanding angles, showing different colored angle pieces and their corresponding degrees, with a hand pointing to a 30-degree piece.

## 2. Finding Complementary and Supplementary Angles

This activity focuses on combining angles to form  $90^\circ$  (complementary) or  $180^\circ$  (supplementary) angles.

- **Complementary Angles:** Find two angle pieces that, when combined, form a  $90^\circ$  angle. For example, combine a  $30^\circ$  piece and a  $60^\circ$  piece.
- **Supplementary Angles:** Find two angle pieces that, when combined, form a  $180^\circ$  angle. For example, combine a  $120^\circ$  piece and a  $60^\circ$  piece.

# Finding Complementary and Supplementary Angles

## Skill/Topic

Complementary and Supplementary Angles

## Lesson

Begin by defining a complementary angle as two angles that add up to  $90^\circ$  and a supplementary angle as two angles that add up to  $180^\circ$ . Have students find two Angle Circle pieces that form a  $90^\circ$  angle and two Angle Circle pieces that form a  $180^\circ$  angle. Once they have identified the angle measurements, have them record the sizes in equations. Have students continue finding two Angle Circle pieces that form a complementary and then a supplementary angle and record the equations.

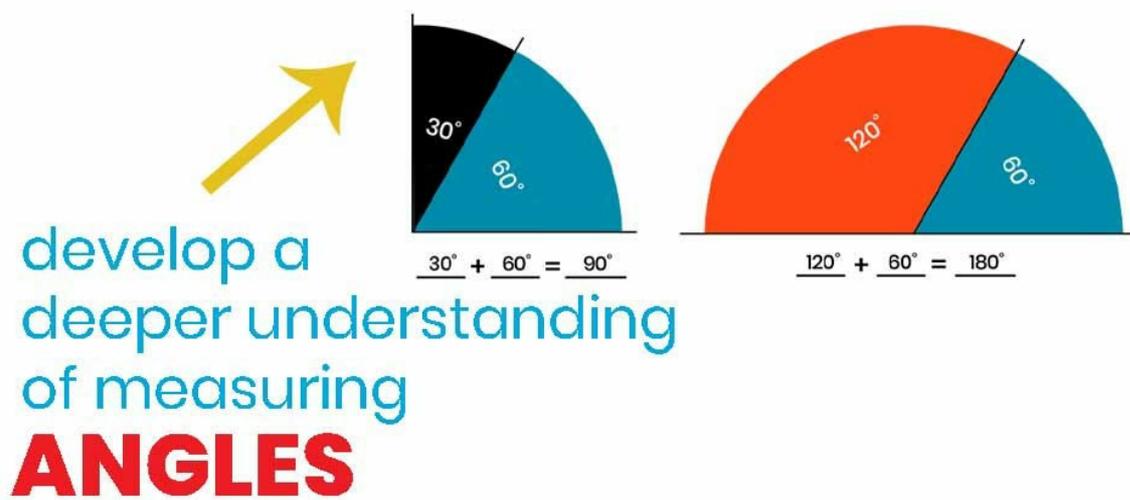


Figure 4: Examples demonstrating complementary angles ( $30^\circ + 60^\circ = 90^\circ$ ) and supplementary angles ( $120^\circ + 60^\circ = 180^\circ$ ) using the angle circle pieces.

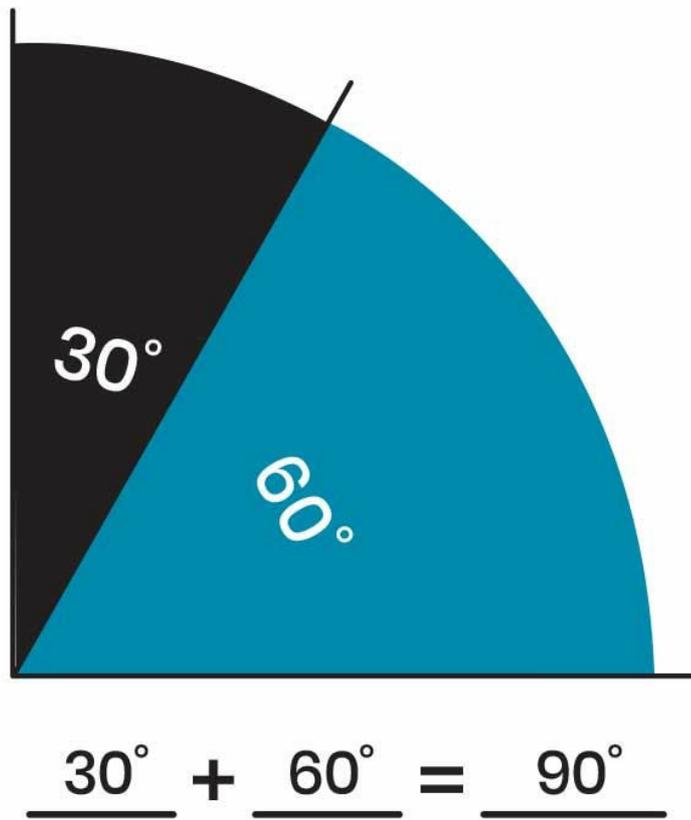


Figure 5: A close-up illustration of two angle pieces, 30 degrees and 60 degrees, combining to form a 90-degree angle.

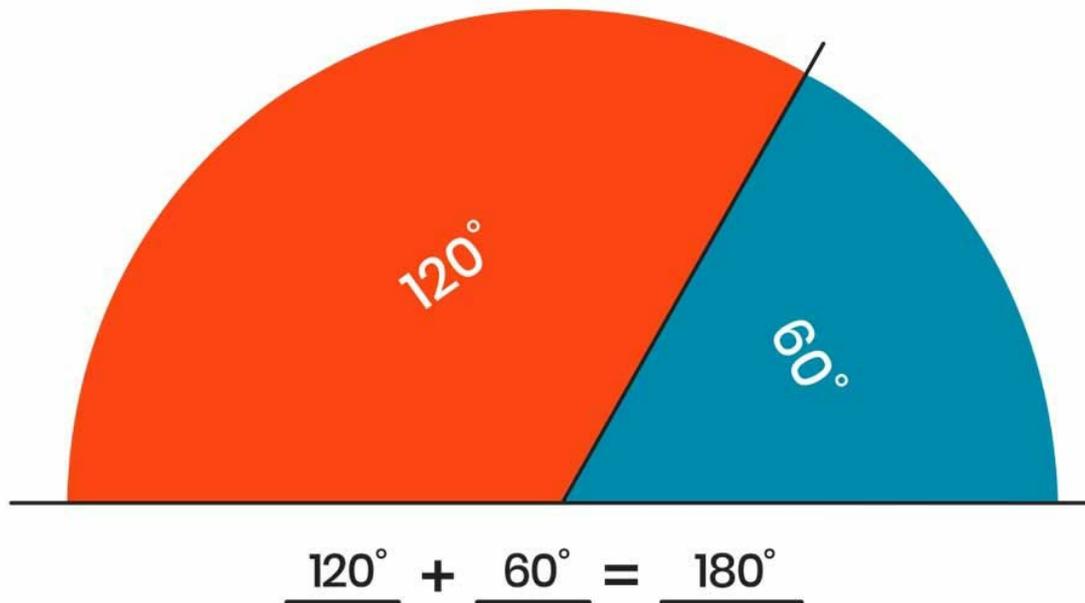


Figure 6: A close-up illustration of two angle pieces, 120 degrees and 60 degrees, combining to form a 180-degree angle.

### 3. Calculating the Sum of Angles

Students can practice adding different angle measurements by combining various pieces.

- Challenge students to find combinations of pieces that add up to a specific angle (e.g.,  $75^\circ = 30^\circ + 45^\circ$ ).
- Use the pieces to demonstrate how multiple smaller angles can form a larger angle.



Figure 7: An example showing how a 30-degree piece and a 45-degree piece can be combined to form a 75-degree angle.

#### 4. Exploring Angle Relationships and Problem Solving

Encourage creative problem-solving and deeper understanding of angle properties.

- Ask students to find multiple ways to form a specific angle (e.g., "How many ways can you show 180 degrees using angles of varying degrees?").
- Discuss the relationship between angles and geometric shapes, such as how angles form corners of polygons.

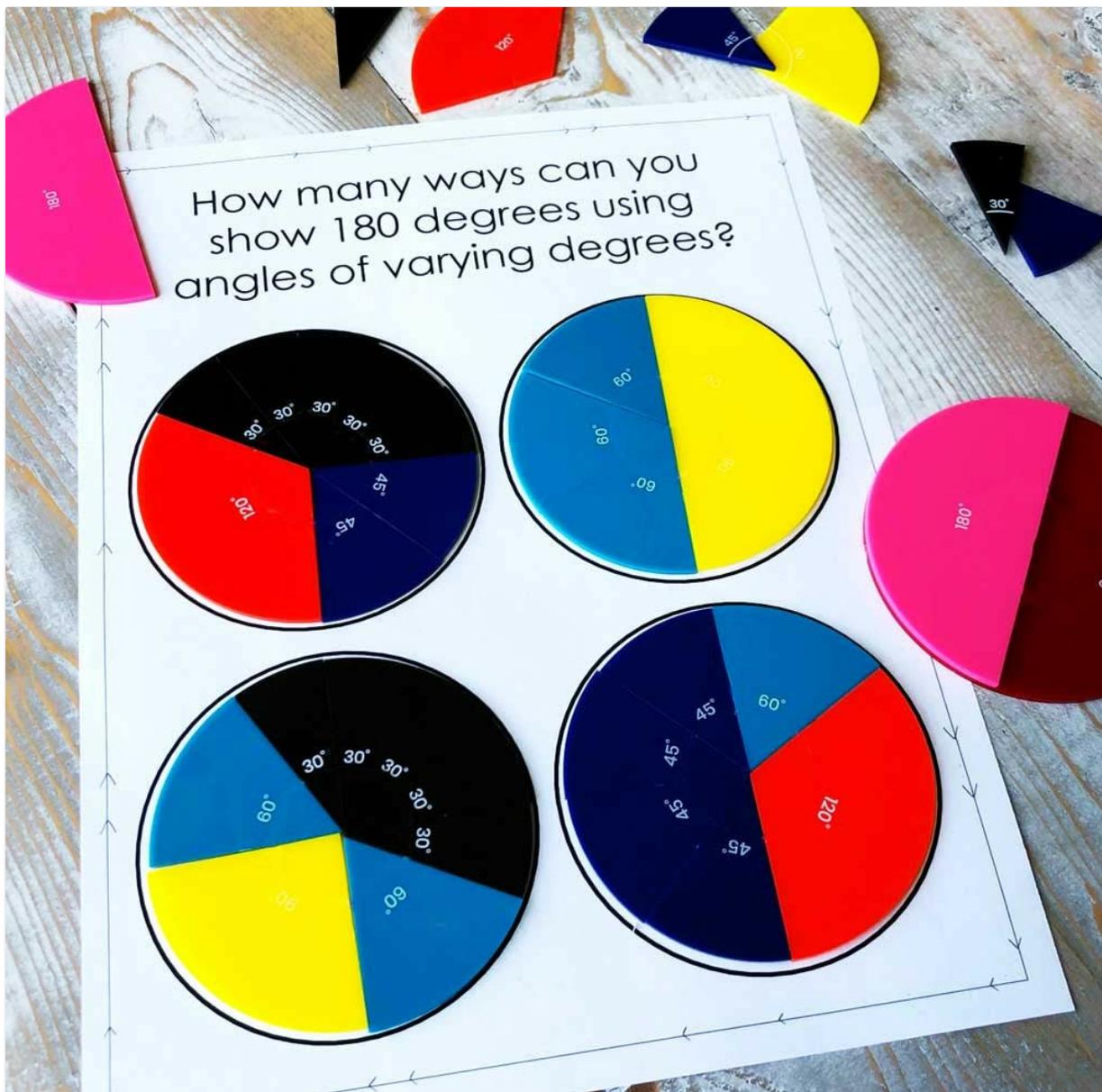


Figure 8: An activity sheet demonstrating various combinations of angle pieces that sum up to 180 degrees, encouraging exploration and problem-solving.

## MAINTENANCE AND CARE

To ensure the longevity of your Rainbow Angle Circles set, follow these simple care instructions:

- **Cleaning:** Wipe the plastic pieces with a soft, damp cloth. A mild soap solution can be used for tougher stains, followed by rinsing with clean water and air drying. Avoid abrasive cleaners or harsh chemicals, as these may damage the plastic or fade the printed markings.
- **Storage:** Store all pieces in the original zip-lock bag or a similar secure container when not in use. This helps prevent loss of individual segments and keeps the set organized. Store in a cool, dry place away from direct sunlight to prevent material degradation.
- **Handling:** While durable, avoid excessive force or bending of the pieces to prevent breakage. The angle markings are screen-printed; handle with care to preserve their legibility over time.

## TROUBLESHOOTING

The Rainbow Angle Circles set is a simple, non-electronic educational tool, and as such, common issues are minimal. However, consider the following:

- **Missing Pieces:** If any pieces are missing upon initial inspection, please contact the retailer or manufacturer for assistance.
- **Fading Markings:** Over extended periods of heavy use, the printed degree markings may show signs of wear. While this is uncommon with proper care, the distinct colors and shapes of the pieces still allow for effective learning even if markings become less visible.
- **Damaged Pieces:** In the event of a broken piece, dispose of it safely to prevent injury. Replacement pieces may be available from the manufacturer or retailer.

## SPECIFICATIONS

<b>Model Number</b>	91486
<b>Product Dimensions</b>	10.16 x 9.91 x 1.52 cm (4 x 3.9 x 0.6 inches)
<b>Product Weight</b>	91 g (0.2 lbs)
<b>Material</b>	Durable Plastic
<b>Language (Manual)</b>	English
<b>Country of Origin</b>	China
<b>Recommended Age</b>	8+ years

## WARRANTY AND SUPPORT

Warranty information for the Rainbow Angle Circles set is typically provided at the point of purchase or can be found on the manufacturer's official website. Please retain your proof of purchase for any warranty claims.

For further support, inquiries, or to explore additional educational resources, please visit the official [hand2mind brand store](#) or contact their customer service directly. You can find more information at the [hand2mind Brand Store on Amazon](#).