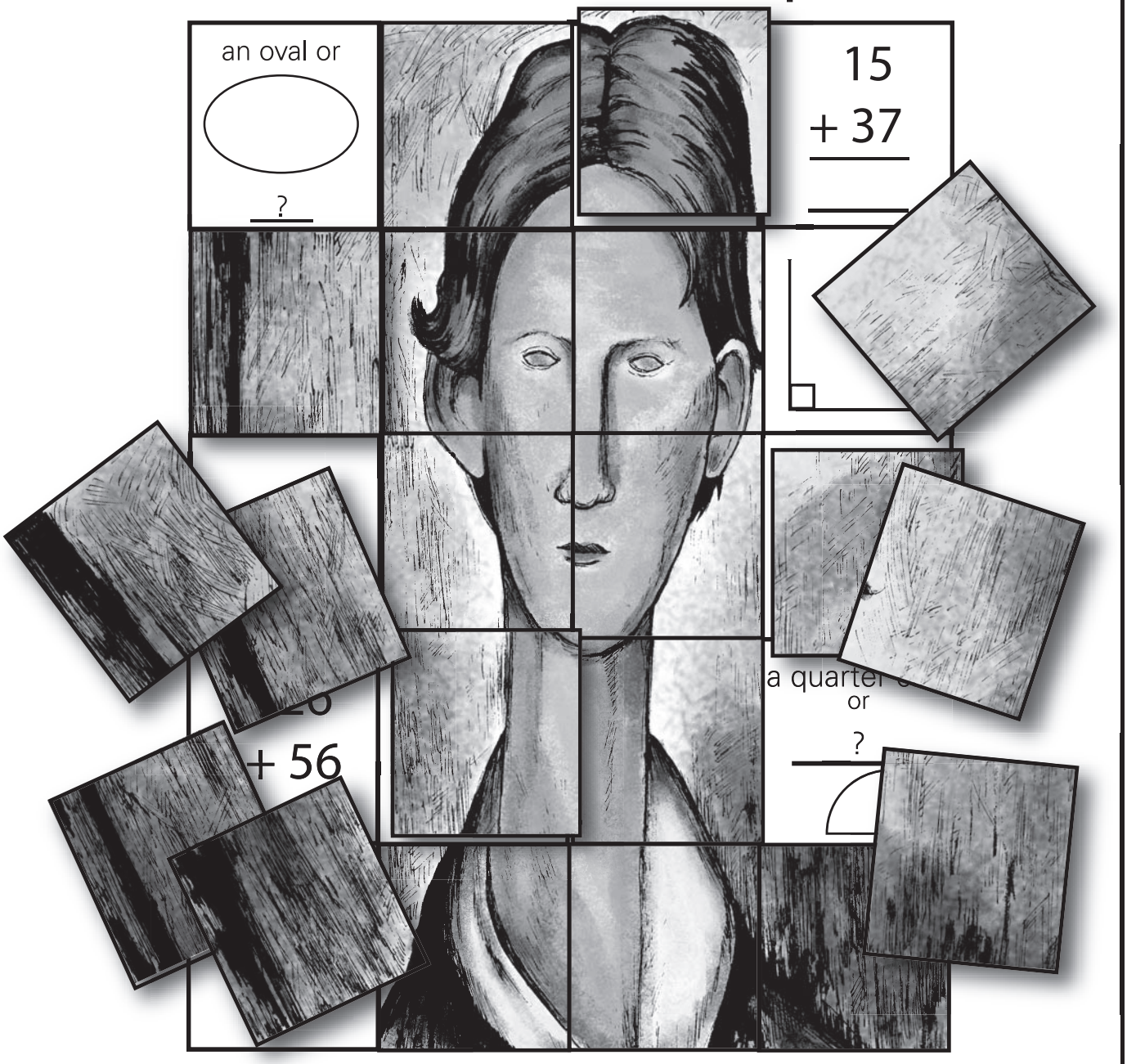
# MATH masterpieces

**Grades 3-5**

**Math Skills + Puzzles = Masterpieces**




**Gunter Schymkiw**

Published by World Teachers Press®
www.worldteacherspress.com

www.didax.com/2-5258

# FOREWORD

The activities in *Math Masterpieces* integrate mathematics with aspects of visual arts. As well as being provided with opportunities to consolidate knowledge and skills in mathematics, students are introduced to significant works of art and their artists. *Math Masterpieces* aims to enhance children's appreciation of the works of great artists, at the same time allowing them to build mathematical skills.

Also available: *Math Masterpieces, Grades 6-7*

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Teacher Notes

# Starry Night

## Background Information

*Starry Night*

**by Vincent van Gogh (1853–1890)**

Vincent van Gogh was a brilliant artist but led an unsettled life because of recurring periods of mental disturbance. He only began painting at the age of 27, but in the ten-year period of activity before he shot and killed himself, he completed 1,600 paintings.

He was not recognized until after his death, and most of his life was lived in abject poverty. He was a friend of the French artist Paul Gauguin, and it was after an argument with him that van Gogh cut off part of his own ear. Most of his paintings are made up of separate unblended brush marks. This technique is clearly seen in *Starry Night*.

Van Gogh always signed his pictures with his first name, Vincent, only.

## Internet Image Search

- ☞ *Sunflowers*
- ☞ *Seashore at Scheveningen*

## Student Instructions

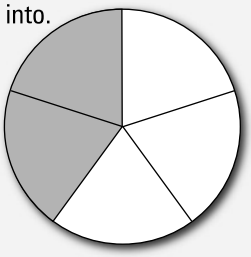
1. Cut out the tiles from the jigsaw sheet.
2. Write the fraction indicated by the shading on each shape on the backing board.
3. Match the fractions on the tiles to the fractions on the backing board.
4. Glue the tiles onto their matching spaces.
5. Color the picture in an interesting way.

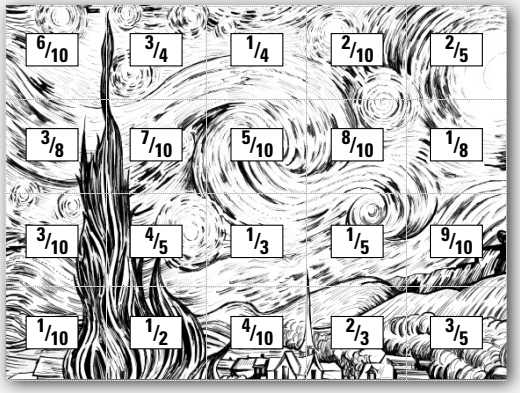
## Talking Mathematically

It is important that students clearly understand what the numerator and denominator of a fraction stand for. Students can often tell you the names numerator and denominator but are not always clear on their meaning.

The **denominator** (bottom number) tells us the number of equal-sized parts a shape is divided (cut, etc.) into.

The **numerator** is the number of these parts that we are considering (talking about).






Draw a shape similar to the one shown and ask students, "What fraction of this cake has icing (is shaded)?"

To find the answers, follow these steps.

**Step 1** – *Draw the fraction bar (line separating numerator and denominator).*

**Step 2** – *The denominator (bottom number) tells us the number of equal-sized parts a shape is divided (cut, etc.) into. This cake is divided into five equal-sized pieces, so the bottom number is 5.*

**Step 3** – *The numerator is the number of these parts that we are talking about.*

The question asked is, "What fraction of this cake has icing (is shaded)?" We are talking about the shaded parts. There are two parts shaded so the top number is 2.

The fraction then is $^{2}/_{5}$.

Now ask students, "What fraction of this cake does not have icing (is not shaded)?"

Follow these steps.

**Step 1** – *Draw the fraction bar (line separating the numerator and denominator).*

**Step 2** – *The denominator (bottom number) tells us the number of equal-sized parts a shape is divided (cut, etc.) into. This cake is divided into five equal sized pieces, so the bottom number is 5.*

**Step 3** – *The numerator is the number of these parts that we are considering (talking about).*

The question asked is, "What fraction of this cake does not have icing (is not shaded)?"

We are talking about the unshaded parts. There are three parts that are not shaded so the top number is 3.

The fraction then is $^{3}/_{5}$.



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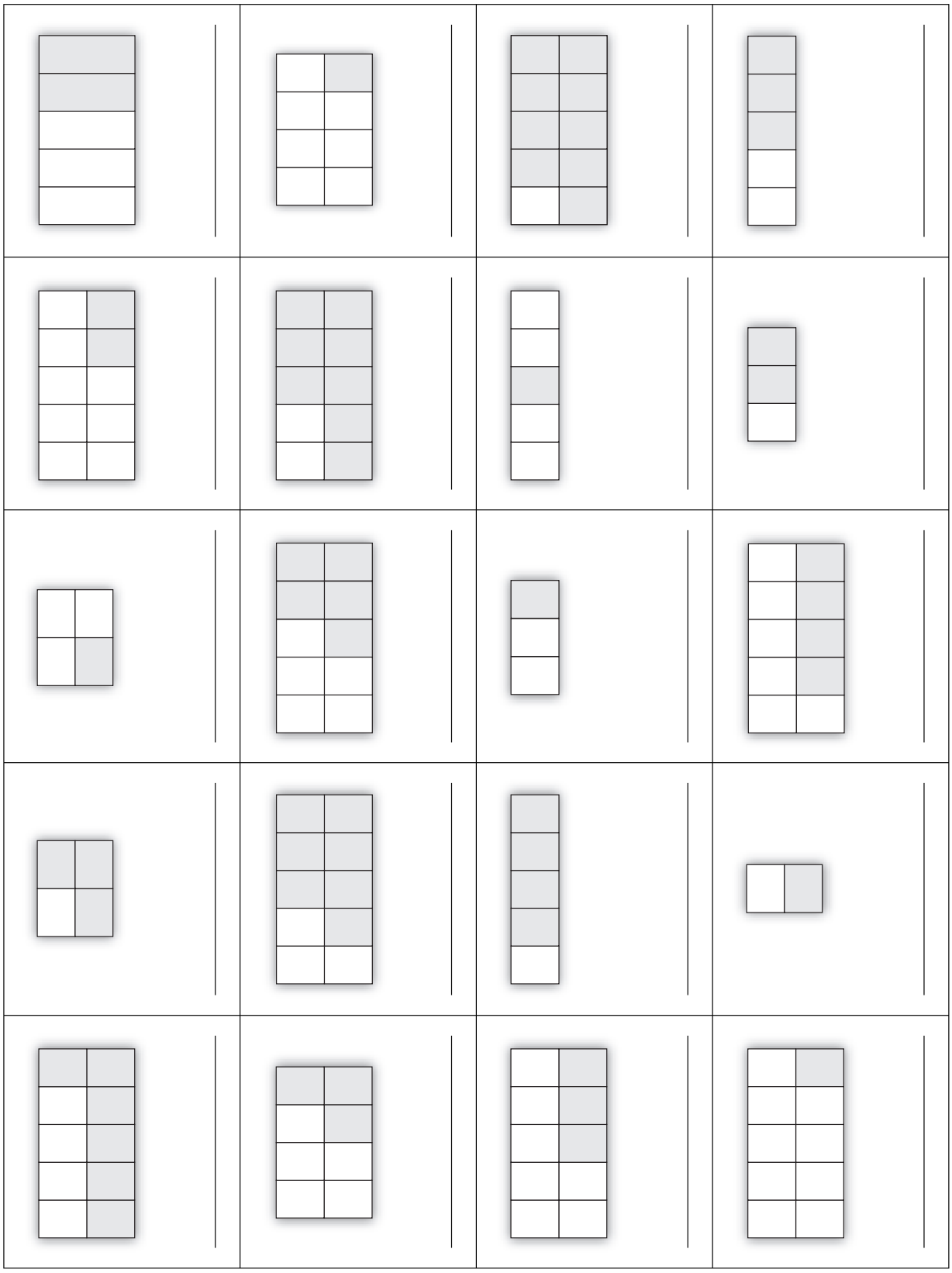
# Starry Night

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