

# Mystery Mosaic

## Description

By printing an image of a work of art and cutting it into several pieces, you can send each part in separate envelopes through the "mail" (a homemade mailbox) and help your child reassemble the pieces to reveal a work of art. Your child can enjoy learning about networking and art history all in one lesson!

## Get Ready for Coding

This activity will expose young children to the concept that pieces and parts of information can be connected and assembled into one more extensive body of information. By constructing Leonardo da Vinci's Mona Lisa as a poster-sized mosaic, with each piece containing instructions for coloring in collaboration with the piece itself, your child will observe that more substantial and complicated works can be broken down into unrecognizable parts of a whole to protect information while sending over a network.

## Instructions

1. Print and cut out the pieces of the Mona Lisa mosaic so that your child has no idea of what the assembled picture will reveal.
2. Watch a video, read a book, or give a short lesson on how information is transmitted on the internet in "packets" that need to be reassembled at the destination they are sent to.
3. Explain that the pieces that you cut up are like "packets" that will be sent via the internet (mailbox), and they will need to be reassembled at the destination.
4. Put each piece of the mosaic in envelopes and address them to wherever they are going. The address is the ISP. Help your child make that connection.
5. Assemble the mailbox project from cardstock (see printables.)
6. "Mail" each envelope to a "destination." (Pick a family member, a friend, or address to yourself.)
7. Open the mailbox (literally, mark one side of the mailbox with "outgoing mail" and the other side "inbox"), open each envelope, and "decode" each piece by following the instructions for coloring.
8. As your child colors and assembles, reinforce what you have explained about sending information over the internet. Explain that they are reassembling a message that has been broken into bits of information and that it will be whole again soon.
9. When the mosaic has been assembled in the proper order, help your child glue the masterpiece onto a poster board. While they are busy with this part of the project, you can read the biography about the Mona Lisa and Leonardo da Vinci, which will help them appreciate the picture they have decoded, while learning about art history.
10. Reiterate what was discussed through this activity and reinforce the concept of breaking down and reassembling information and how the mosaic and the internet are connected.

## Why is this a great thing to do?

### Teaches children computer science terminology.

While you are explaining how information is sent over the internet, your child is learning new computer science-related vocabulary as you use the proper terms to explain these concepts.

### Enhances vocabulary.

While teaching your child new terminology, this is also an excellent opportunity to develop general vocabulary skills. For example, the word server has more than one meaning. Explain how sometimes a server can refer to a person that serves food at a restaurant, but in the computer world, it refers to a central system that allows access to the internet.

### Teaches children about art history.

As your child colors and assembles this work of art (or any work of art that you choose), you can use this opportunity to tell the story of the work of art and even give biographical information about the artist. This is an excellent way to double-dip and teach multiple subjects at once while still addressing the core concept of digital packets of data being transmitted over the internet.

### Teaches children about networking and how digital information is transmitted.

This activity will help your child understand there is a carefully designed process that allows users to send and receive digital information. It is essential to help your child understand that information doesn't merely float through the air. The data has a specific way of arriving at a destination because of careful programming (coding.)

### Develops observational skills.

Your child will observe and follow the instructions for coloring the pieces of the mosaic and notice the cohesiveness of the pieces as they gather the pieces into one unit.

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## Materials Needed

- Printables
- Printer
- Cardstock (Mailbox)
- Glue gun
- Glue sticks
- Scissors
- Poster board
- Coloring medium (allow your child to choose crayons, markers, watercolor, etc.)

## Vocabulary

### Server

A computer or program that manages access to a central resource or service in a network.

### Network

Several interconnected computers, machines, or operations.

### Internet

A worldwide computer network that allows the transmission of information and communication.

### Packet

A block of data transmitted across a network.

### ISP

Internet Service Provider: a company that provides subscribers with access to the internet.

### Transmitted

Cause something to pass from one place or person to another.

### Destination

The place to which someone or something is going or being sent.

### Mosaic

A picture or pattern produced by arranging together small colored pieces of material such as paper, glass, stone, tile, or glass.

## Why is this a great thing to do?

### Develops analytical thinking skills.

As your child assembles the pieces of the mosaic into the correct arrangement, they are developing their ability to analyze and construct parts of a whole into a logical order.

### Develops fine motor skills.

When your child builds a mailbox with cardstock and cuts, glues, and assembles it, they are actively engaging their fine motor skills.

## Talking Tips

"What is the internet?"

"How does your picture show up on the internet for everyone to see?"

"Where does a message travel after you send it by email?"

"Why does information need to be broken down and reassembled?"

"How many stops do you think your message makes before it gets to the final destination?"

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## Computer Science Teachers Association (CSTA) Correlations

**1B-NI-05: Model how information is broken down into smaller pieces, transmitted as packets through multiple devices over networks and the internet, and reassembled at the destination.**

**Concept:** Networks & The Internet

**Subconcept:** Network Communication & Organization

Learning to protect one's device or information from unwanted use by others is an essential first step in learning about cybersecurity. Students are not required to use multiple strong passwords. They should appropriately use and protect the passwords they are required to use.

## Tips & Extensions

While assembling the mosaic of the Mona Lisa, read a fun biography about Leonardo da Vinci such as the one by Brad Meltzer titled "I Am Leonardo da Vinci."

Depending on how your child learns best, use as many resources as you can access to explain how the internet and networking works. YouTube, web-based diagrams, and books with visual representations of how digital information is sent can be fun and useful. For example, [here](#) is one that has a visual description of how the internet works.

One of the printable projects included a fee, but any image of a work of art (in coloring book format) can be found on the internet and used for this activity.