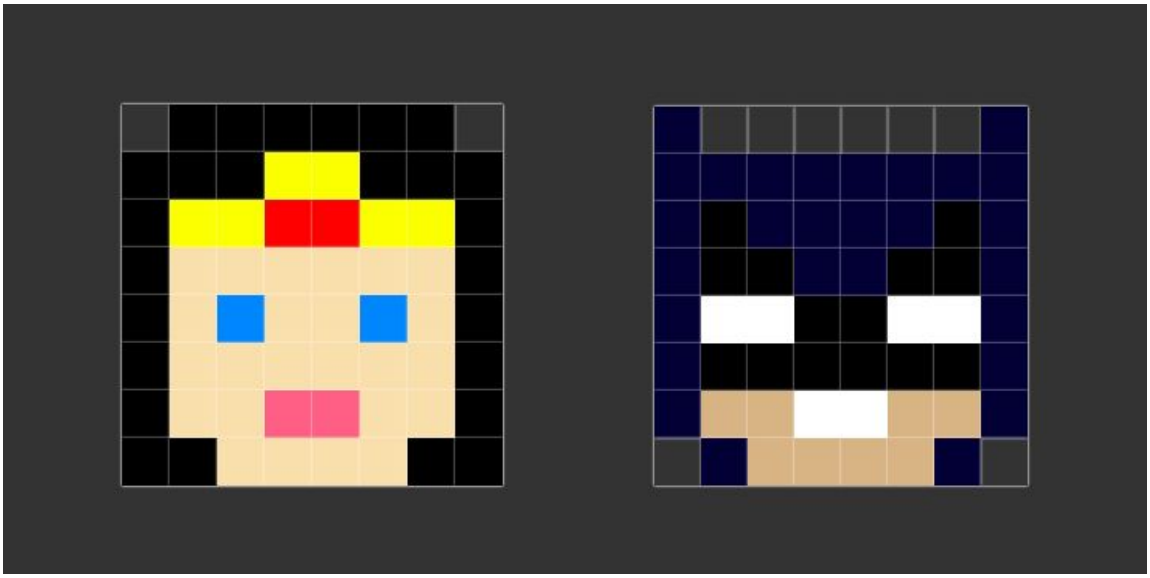
Superhero Masks Teacher Guide



Summary

- Web address: **tynker.com/hour-of-code/superhero-masks**
- Coding skill level: **Advanced**
- Recommended grade level: **Grades 6+**
- Time required: **55 minutes**
- Number of modules: **1 module with 1 tutorial**
- Coding Language: **HTML and CSS**

Teacher Guide Outline

Welcome!
- How to Prepare

Activity
- Overview
- Getting Started (10 minutes)
- Tutorial (45 minutes)
- Extended Activities

Going Beyond an Hour
- Do More With Tynker
- Tynker for Schools

Help

Welcome!

Are your students ready to unleash their inner superhero? In this lesson, students will follow a tutorial that will show them how to use HTML and CSS together to make pixel art superhero masks in a browser! Students will be provided code to create a superhero mask, but are encouraged to add to or change the code to make it their own. By the end of this lesson, students will have combined creativity, HTML, CSS, and coding concepts to make pixel art in a browser.

How to Prepare

This activity is designed for self-directed learning. Your role will be to help students individually and facilitate as students complete the coding activities on their own. The best way to prepare is to:

1. **Familiarize yourself with the material.** After selecting your Hour of Code lesson (e.g., Superhero Masks), read through the teacher guide and complete the activity before assigning it to students. This will allow you to troubleshoot anything in advance and plan for potential questions from your students.
2. **Get students excited about coding.** Inspire students and get them excited for the Hour of Code event. Here is a link to resources such as inspirational videos and posters from the Hour of Code website: https://hourofcode.com/us/promote/resources#videos
3. **OPTIONAL: Sign Up for a teacher account.** Although an account is NOT required, creating a free teacher account will allow you to access teacher guides, answer keys, and tons of additional resources. You'll also be able to create free accounts for your students, monitor their progress, and see their projects.
4. **OPTIONAL: Create student accounts.** From your teacher account, you can easily create free student accounts for all your students. This will allow them to save their projects and progress, so they can continue coding when they get home! Again, this is not necessary to complete an Hour of Code.
5. **OPTIONAL: Print certificates to hand out.** While signed in to your Tynker teacher account, you can print certificates by clicking on a classroom from your teacher dashboard, clicking the "Gradebook" tab, going to "Hour of Code," and clicking the "Print All Certificates" button. This will only print certificates for student accounts assigned to the selected classroom.

Activity

To begin Superhero Masks, have your students go to this link:
tynker.com/hour-of-code/superhero-masks

Overview

Objectives

Students will...

- Apply coding concepts to code a project
- Use HTML and CSS to create superhero masks

Materials

- Computers, laptops, or Chromebooks (1 per student)

Vocabulary

- **Code:** The language that tells a computer what to do
- **Sequence:** The order in which steps or events happen
- **Command:** A specific action or instruction that tells the computer to do something

Standards

- **CCSS-ELA:** RI.6.7, SL.6.1, SL.7.1, SL.8.1
- **CCSS-Math:** MP.1
- **CSTA:** 2-AP-11, 2-AP-15, 2-AP-16, 2-AP-17
- **CS CA:** 6-8.AP.11, 6-8.AP.12, 6-8.AP.16, 6-8.AP.17
- **ISTE:** 1.c, 1.d, 4.d, 5.c, 5.d, 6.b, 7.c

Getting Started (10 minutes)

1. Tell students that they are going to use HTML and CSS together to create a superhero mask.
2. Use your projector to display an example of today's activity: tynker.com/hour-of-code/superhero-masks
3. Model for your students how to utilize the tutorial. For suggestions, please refer to the Help section of this lesson plan and read "What does the tutorial include?"
4. Optional: Read the Batman and Wonder Woman code comments out loud to your students. Here is an example of what the comments look like:

```
<!-- Row 3 -->

<!-- The next two rows have some black cells to
add shadows to Batman's mask. -->
```

Tutorial (45 minutes)

This module has two HTML files and one CSS file. Facilitate as students complete the Draw a Superhero Mask tutorial on their own:

1. Batman (Tutorial)

- In this tutorial, students are provided an HTML file with code to create a Batman mask.
- Ask students to read through the tutorial before they start coding.
- Tell students that the comments (noted with "<!-- -->" symbols) are there to help them understand the given code. Here is an example:

```
23  </head>
24  <!-- End the document header -->
25
26  <!-- Begin the document body -->
27  <body>
28

    <!-- Canvas -->

    <!-- Create the canvas for the pixel art. In HTML,
    the "canvas" is a space in which graphics can be
    drawn. In this case, the canvas will be used to draw
    an 8 by 8 grid. -->

30    <div class="canvas">
```

- Encourage students to analyze the given code, then create pixel art of their favorite superhero OR modify their code. Here are some suggestions:
    - Change the color of Batman's mask to their favorite color (e.g., pink)
    - Make Batman have yellow eyes instead of white eyes
    - Change the color of Batman's face to green instead of tan
    - Experiment with the different colors to make Batman look like Batgirl

  For more ideas, direct your students' attention to "Step 3: What Can You Do?" of the tutorial.

2. Wonder Woman (Tutorial)

- In this tutorial, students are provided an HTML file with code to draw a Wonder Woman mask.
- Ask students to read through the tutorial before they start coding.
- Tell students that the comments (noted with "<!-- -->" symbols) are there to help them understand the given code.
- Encourage students to analyze the given code, then create pixel art of their favorite superhero OR modify their code. Here are some suggestions:
    - Design a new tiara for Wonder Woman
    - Change the color of Wonder Woman's hair

  For more ideas, direct your students' attention to "Step 3: What Can You Do?" of the tutorial.

Teacher Tips:

- Do students need help creating their own mask? Please refer to the Help section of this lesson plan and read "How do my students create their own mask?" OR direct your students' attention to the "Design your own mask" section of the tutorial.
- Do students need help running their program? Please refer to the Help section of this lesson plan and read "How do my students run their code?"

Extended Activities

Let's Create Some Abstract Pixel Art!

1. Hand students an 8x8 grid sheet (1 per student) and colored pencils.
2. Tell students to color their grid sheet and include an abstract design or pattern.
3. Once students are done coloring their 8x8 grid sheet, tell students to return to Tynker and open the "myPixelArt.html" file.
4. Students can use their 8x8 grid sheet as a reference as they recreate their design on the "myPixelArt.html" file. **Note:** The Superhero Masks tutorial includes a "Color Reference Guide," which includes a list of colors (e.g., maroon, light-green, wheat, yellow) that your students can use.
5. **Bonus:** Encourage students to trade their abstract designs with a partner. Can they recreate their partner's abstract pixel art in Tynker?

Going Beyond an Hour

If your students enjoyed an Hour of Code, they're sure to enjoy the rest of what Tynker has to offer! Tynker offers a complete premium solution for schools to teach Computer Science. Over 400 hours of lessons are available to take K-8 students from block coding to advanced text coding. We offer tons of resources for teachers, including comprehensive guides, free webinars, and a forum to connect with other educators.

More Hour of Code Activities

Tynker offers many other tutorials for the Hour of Code, including STEM Hour of Code lessons that you can integrate into the subjects you already teach. Check out the main Tynker Hour of Code page to see all the tutorials!

Do More with Tynker

With Tynker, kids don't just acquire programming skills—they can explore the world of possibilities that coding opens up. Tynker has several interest-driven learning paths that make coding fun, both inside and outside the classroom:

- **Coding and Game Design:** Your students can use Tynker Workshop, a powerful tool for crafting original programs to make games, stories, animations, and other projects. They can even share their work with other kids in the Tynker Community.
- **Drones and Robotics:** Tynker integrates with connected toys, including Parrot drones and Lego WeDo robotics kits, so kids can see their code come to life.
- **Minecraft:** Tynker integrates with Minecraft so your students can learn coding through a game they love. Tynker offers skin and texture editing, as well as a custom Mod Workshop that lets kids try their original code in Minecraft.

Tynker for Schools

Used in over 80,000 schools, our award-winning platform has flexible plans to meet your classroom, school, or district needs. All solutions include:

- Grade-specific courses that teach visual coding, JavaScript, Python, robotics and drones
- A library of NGSS and Common Core compliant STEM courses that are great for project-based learning
- Automatic assessment and mastery charts for whole schools and individual classes and students
- Easy classroom management with Google Classroom and Clever integration
- Professional training, free webinars and other teacher training resources

Need help getting Tynker started at your school? Contact us to learn more about teaching programming at your school with Tynker!

Help

Need help? Below you'll find answers to frequently asked questions about Hour of Code and using Superhero Masks.

What is Hour of Code?

The Hour of Code is a global learning event in which schools and other organizations set aside an hour to teach coding. No prior coding experience from you or your students

is needed! The event is held every December during Computer Science Education Week. You can also organize an Hour of Code year-round. The goal of the Hour of Code is to expand access to computer science education for people of all backgrounds. Learning computer science helps students develop logic and creativity, and prepares them for the changing demands of the 21st century. Tynker has been a leading provider of lessons for the Hour of Code since the event began in 2013. Since then, over 100 million students from 180 countries have finished an Hour of Code.

How do I prepare for Hour of Code?

1. **Familiarize yourself with the material.** After selecting your Hour of Code lesson (e.g., Superhero Masks), read through the teacher guide and complete the activity before assigning it to students. This will allow you to troubleshoot anything in advance and plan for potential questions from your students.
2. **Get students excited about coding.** Inspire students and get them excited for the Hour of Code event. Here is a link to resources such as inspirational videos and posters from the Hour of Code website: https://hourofcode.com/us/promote/resources#videos
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How do I open Superhero Masks?

Have your students open a browser tab to this URL:
tynker.com/hour-of-code/superhero-masks

Who is this activity for?

Superhero Masks is a tutorial for advanced coders in grades 6+ who want to start learning about web design with HTML and CSS.

What will my students learn?

Students will combine creativity, HTML, CSS, and coding concepts to make pixel art in a browser. In this process, students will create art, develop debugging skills, practice coding concepts, and use logical reasoning skills.

What devices do I need?

Students will need computers, laptops, or Chromebooks (1 per student) with an internet connection and an up-to-date browser. If not enough devices are available, students can work in pairs on the same device.

Do I need to create a Tynker Account for my students?

No, you do not need to create a Tynker account for your students.

What is HTML?

HTML is a markup language that means "Hypertext Markup Language." People often use HTML for creating web pages.

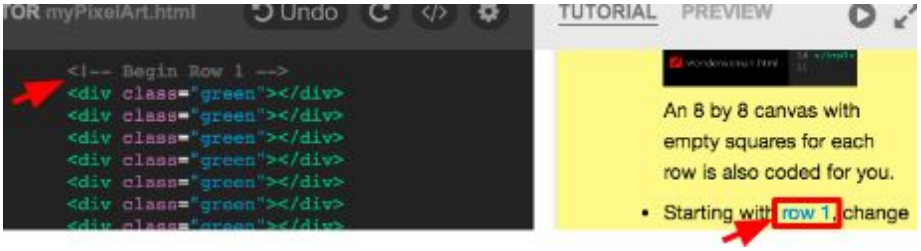
What is CSS?

CSS is a style sheet language that means "Cascading Style Sheets." People often use CSS to control the presentation (e.g., fonts, colors, layout) of a webpage that is written with another language such as HTML.

How can Tynker help me manage my Hour of Code?

Tynker has several free features for registered teachers that will help you manage your Hour of Code. If you set your students up with a Tynker classroom, you will be able to track their progress and print Hour of Code completion certificates for them to keep.

What does the tutorial include?

The tutorial includes several features and resources to help your students get started! Here's what you will find:

- Step-by-step directions to help your students create mask pixel art
- Interactive hyperlinks
    - If you select one of the hyperlinks in the tutorial, it will take you to that specific line of code or to the specified file. For example, clicking the hyperlink "row 1" in the tutorial will take you to "Row 1" of your code. From there, students can edit their code. No scrolling needed!