Responsible Consumption and Production JavaScript Teacher Guide

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Summary

- Web address: tynker.com/hour-of-code
- Coding skill level: **Advanced**
- Recommended grade level: **Grades 6+ (U.S.), Years 7+ (U.K)**
- Time required: **50 minutes**
- Number of modules: **1 module**
- Coding Language: **JavaScript**

Teacher Guide Outline

Welcome!
- How to Prepare

Activity
- Overview
- Getting Started (20 minutes)
- Tutorial (30 minutes)
- Extended Activities

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

Help

Welcome!

Welcome to Hour of Code! This year, Tynker is incorporating meaningful coding projects that align with the United Nations Sustainable Development Goals. The Goals are intended to bring awareness to global challenges and provide a plan of action to achieve a more sustainable future for all. You can read about the 17 Goals and global challenges here:
https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Note: Each Goal listed on the website also includes information on *Facts and figures*, *Goal targets*, and *Links*.

In this lesson, students are introduced to responsible consumption and production practices (*Goal 12*) as they complete the activities in this teacher guide. The lesson is intended to be completed in two different parts (as described in the "Getting Started" section of this teacher guide). In Part 1, students will reflect on *Goal 12: Responsible Consumption and Production* by completing a variety of activities. Part 1 also includes a "Goal 12: Responsible Consumption and Production" assignment, which will allow you to assess your students' understanding.

In Part 2, students will combine their creativity and coding skills as they complete the "Responsible Consumption and Production" project using the Text Code Editor. Students are provided a tutorial to help guide their creative process as they complete the project. **Note:** This project is open-ended. Students are provided suggestions on how to get started, but need to use JavaScript and the HTML canvas to draw images and write text.

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 Tynker lesson (e.g., Responsible Consumption and Production), read through this 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 the Responsible Consumption and Production lesson.
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.
6. **Complete this lesson in two different parts.** Please refer to the "Getting Started" section of this teacher guide.

Activity

To begin Responsible Consumption and Production, have your students to go this URL: **tynker.com/hour-of-code**

Overview
Objectives
Students will...
- Apply coding concepts to create a Responsible Consumption and Production project
- Read about the Sustainable Development Goals

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
- **Function:** A set of known actions that the computer can perform
- **Variable:** Stores a value, such as a number or a string of text, at a named location
- **Argument:** Value passed into a function
- **Parameter:** An extra piece of information that is passed into a function
- **Loop:** An action that repeats one or more commands over and over

U.S. Standards
- **CCSS-ELA:** RI.6.4, RI.6.7, SL.6.1, RI.7.4, SL.7.1, SL.8.1, RI.8.4, RI.9-10.5
- **CCSS-Math:** MP.1
- **K12CS:** P1.1, P1.3, P2.1, P2.3-2.4, P3.2-3.3, P4.4, P5.1-5.2, P6.1-6.2, P7.2-7.3
- **CSTA:** 2-AP-13, 2-AP-17, 3A-AP-17, 3B-AP-11

- **CS CA:** 6-8.AP.13, 6-8.AP.16, 6-8.AP.17, 9-12.AP.12, 9-12.AP.16
- **ISTE**: 1.c, 1.d, 4.d, 5.c, 5.d, 6.b

U.K. Standards
National Curriculum in England (computing):
- **Key Stage 3 (Years 7-9)**
  - Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability
  - Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns
- **Key Stage 4 (Year 10)**
  - Develop their capability, creativity and knowledge in computer science, digital media and information technology
  - Develop and apply their analytic, problem-solving, design, and computational thinking skills
  - Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns

Getting Started (20 minutes)

The lesson is intended to be completed in two different parts:

Part 1

Introduce students to *Goal 12: Responsible Consumption and Production* by completing the following activities:
- Play this short video that explains the 17 Sustainable Development Goals: https://youtu.be/0XTBYMfZyrM
- Ask students to read about *Goal 12*: https://www.un.org/sustainabledevelopment/sustainable-consumption-production/ *Optional:* Tell students to create "true/false" statements about the information they just read, then quiz a friend.
- Inform students that they're going to use Tynker in an upcoming activity to create their own project where they will program a Responsible Consumption and Production project using JavaScript and the HTML canvas. *Optional:* Before students start coding, ask them to complete the "Goal 12: Responsible Consumption and Production" assignment (located on the next page) as an in-class activity.

Name _____
Date _____

Goal 12: Responsible Consumption and Production

Directions: Answer the questions below. Here are some helpful links you can use:
- https://www.un.org/sustainabledevelopment/sustainable-consumption-production/
- https://www.un.org/sustainabledevelopment/sustainable-development-goals/
- https://www.un.org/sustainabledevelopment/be-the-change/

Questions:
1. List 3-5 interesting facts you learned about *Goal 12: Responsible Consumption and Production*.

   _____

   _____

   _____

   _____

2. What changes can you make to become a responsible consumer?

   _____

   _____

   _____

3. Do you have any lingering questions? If not, what do you believe is the greatest challenge of Goal 12?

   _____

   _____

   _____

   _____

4. List at least three helpful websites, books, or documentaries that you can use as a resource to learn more information on how to become a responsible consumer.

    _____

    _____

5. What is your "Responsible Consumption and Production" Tynker project going to be about?

    _____

    _____

    _____

    _____

    _____

    _____

    Use the space below to brainstorm ideas:

Part 2:
- Now that your students know more about the Sustainable Development Goals, they're ready to move on to the Tutorial and create a meaningful coding project inspired by *Goal 12: Responsible Consumption and Production*.
- *Optional:* Model for your students how to utilize the tutorial and Text Code Editor. You can also play this short video (starting at 00:17 seconds) on how to create a JavaScript project: https://www.youtube.com/watch?v=FD6iD9x-0UI&t=23s

Tutorial (30 minutes)

This lesson has one tutorial. Facilitate as students complete the Responsible Consumption and Production tutorial on their own:

Responsible Consumption and Production (Tutorial)
- In this DIY, students will create an open-ended project that illustrates being a responsible consumer. **Note:** This project is open-ended and research focused. Students will need to write their own code using JavaScript.
- *Optional:* Model for your students how to utilize the tutorial and Text Code Editor. You can also play these short videos on how to...
  - Use the Top Editor Bar: https://www.youtube.com/watch?v=0jcaA9HMvv8
  - Use the Top Navigation Bar: https://www.youtube.com/watch?v=WNR1fn_CuKw
- Remind students to use their "Goal 12: Responsible Consumption and Production" assignment as a reference.
- Do students need help running their program?
  - Students can run their code's output by selecting this Play button, located at the top right corner of their screen:

- Make sure students are adding their code to the correct file(s).

Extended Activities

Let's Discuss

Pair up students, then ask them to discuss the following questions:
- Should we throw away gently used clothes? What could we do with them?
- What can neighborhoods/communities do to make recycling more accessible?
- What do you think will happen if trash continues to pollute our oceans?
- Why do you think some people don't care to reduce their consumption/waste? What harm could this potentially cause?

Optional: Ask students to share their answers with the class.

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 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 90,000 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 using Responsible Consumption and Production.

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., Responsible Consumption and Production), 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 Responsible Consumption and Production?

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

TYNKER™
CODING FOR KIDS

Who is this activity for?

Responsible Consumption and Production is intended for students in grades 6+ (U.S.) or years 7+ (U.K.) with some coding experience.

Do I need to create Tynker accounts for my students?

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

What devices do I need?

Computers, laptops, or Chromebooks (1 per student) with an internet connection

What will my students learn?

Students will combine creativity, originality, JavaScript syntax, and coding concepts to create a project that illustrates being a responsible consumer. In this process, students will develop debugging and logical reasoning skills. Additionally, students will learn about the United Nations Sustainable Development Goals, specifically *Goal 12: Responsible Consumption and Production*.

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?

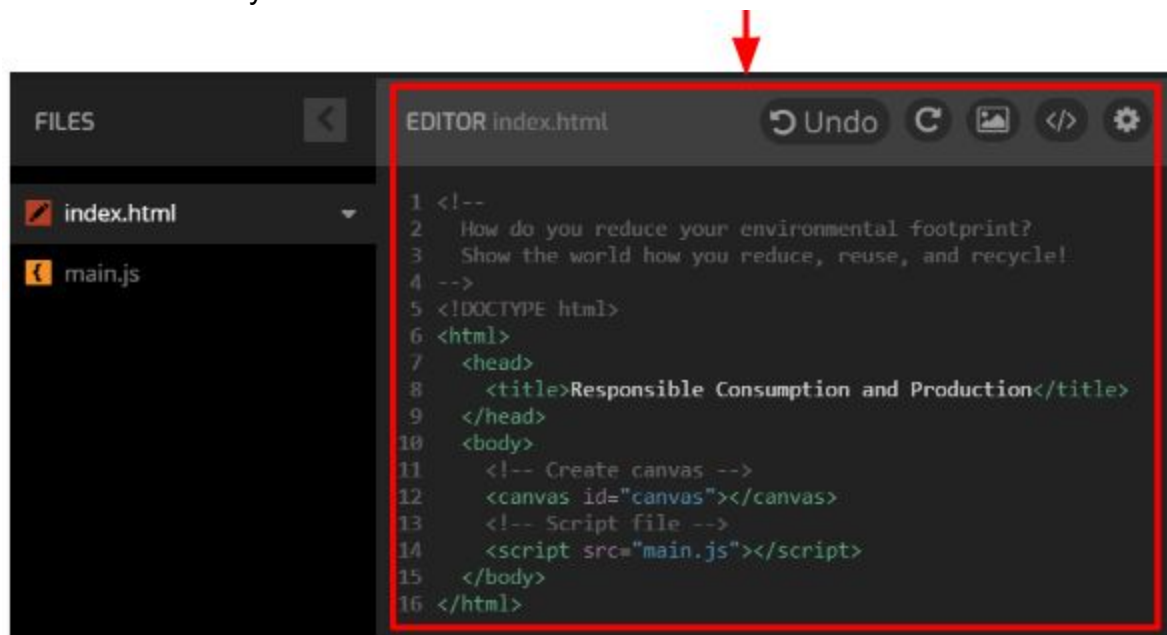The tutorial provides Instructions to help guide your students' creative process:
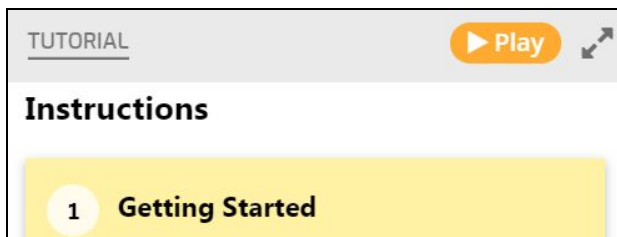
How do my students run their code?
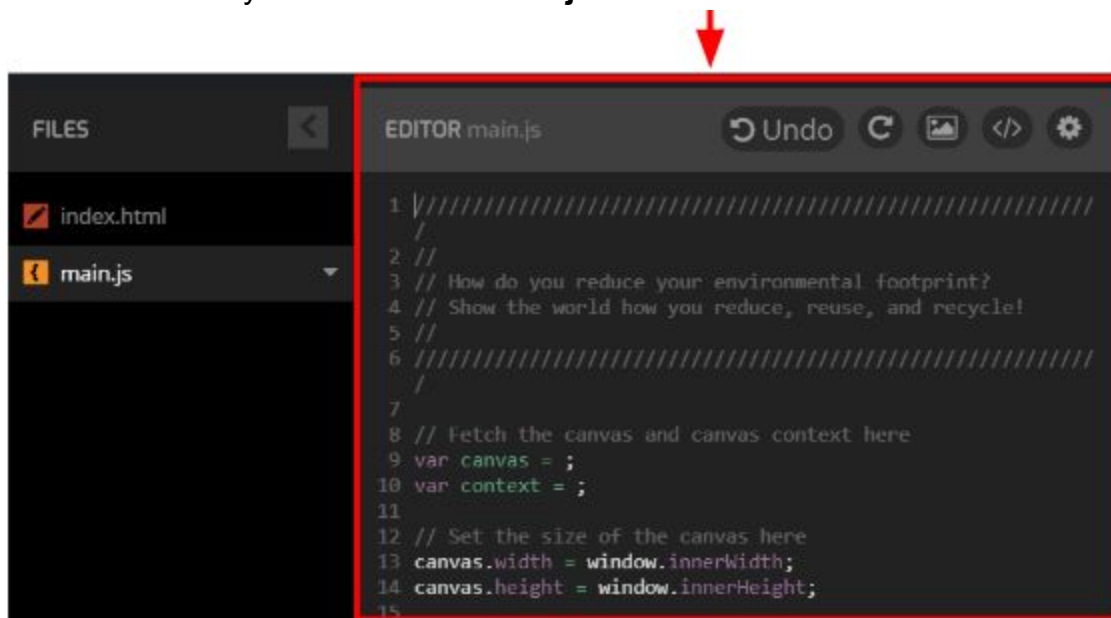
Tell students to select the "play" button:

Where do my students edit their code?

Here is where they can add code to the **.html** file:

Here's where they can add code to the **.js** file:

How can I contact the Tynker support team?

If you have any issues or questions, send us an email at support@tynker.com.