

Responsible Consumption and Production Teacher Guide



Summary

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| ● Web address: | tynker.com/hour-of-code |
| ● Coding skill level: | Beginner |
| ● Recommended grade level: | Grades 3-5 (U.S.), Years 4-6 (U.K) |
| ● Time required: | 50 minutes |
| ● Number of modules: | 1 module |
| ● Coding Language: | Block-based |

Teacher Guide Outline

Welcome!

- How to Prepare

Activity

- Overview
- Getting Started (20 minutes)
- DIY Module (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 will explore what happens to the waste/trash we throw away (*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 an optional "Goal 12: Responsible Consumption and Production" assignment, which will allow you to assess your students' understanding.

In Part 2, students will combine their creativity, programming skills, and coding concepts (i.e., simple events, conditional loops, simple motion, simple conditionals, visibility) as they complete the "Responsible Consumption and Production" project using Tynker. Students are provided step-by-step directions and code blocks to help them get started. "Page 7" also includes challenges to help your students expand on their project.

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 go to this URL: tynker.com/hour-of-code

Overview

Objectives

Students will...

- Explore the Sustainable Development Goals
- Apply coding concepts such as simple events, conditional loops, simple motion, simple conditionals, and visibility
- Use code blocks to create a Responsible Consumption and Production project

Materials

- **For web:** Computers, laptops, or Chromebooks (1 per student)
- **For mobile:** iPads or Android tablets (1 per student)

Vocabulary

- **Code:** The language that tells a computer what to do
- **Actor:** A Tynker character or object that can talk and interact with others
- **Stage:** The background of the project where the Actors are placed
- **Sequence:** The order in which steps or events happen
- **Command:** A specific action or instruction that tells the computer to do something
- **Loop:** An action that repeats one or more commands over and over
- **Conditional loop:** A loop that performs one or more commands as long as the specified condition is met

U.S. Standards

- **CCSS-ELA:** RI.3.7, RF.3.4, RF.3.4.A, SL.3.1, RF.4.4.A, RF.1.4.A, RF.4.4, SL.4.1, RF.5.4.A, RF.5.4, SL.5.1
- **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:** 1B-AP-11, 1B-AP-12, 1B-AP-14
- **CS CA:** 3-5.AP.10, 3-5.AP.13, 3-5.AP.14, 3-5.AP.17
- **ISTE:** 1.c, 1.d, 4.d, 5.c, 5.d, 6.b

U.K. Standards

National Curriculum in England (computing):

- **Key Stage 2 (Years 4-6)**
 - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
 - Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
 - Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
 - Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

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 (located at the top right) that explains the 17 Sustainable Development Goals:
<https://www.allaboardforglobalgoals.com/en-us#video-transcript-modal>
- Next, play this short video:
<https://youtu.be/bv7eBmCn-xk>
- Lead a discussion with your class. Ask students...
 - Where does some of our trash end up? (Answer: Underground and in oceans.)
 - Why is it bad when trash ends up in the ocean? (Answer: The trash in oceans could potentially harm humans and animals.)

Hour of Code, Responsible Consumption and Production

- What can you do to reduce your waste? (Answer: Don't buy or take things that you don't need, give an item to someone instead of throwing it away)
- What does it mean to "recycle"? (Answer: Take something that was used and turn it into something useful.)
- What are some items we can recycle? (Answer: Cans, glass, paper, plastic)
- Tell students that they're going to use Tynker in an upcoming activity to program a Responsible Consumption and Production project. *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, then create an outline for your "Responsible Consumption and Production" project.

Questions:

1. List at least 3-5 items you can recycle:

2. What can you do to reduce your waste?

3. Instead of throwing away clothes, what can you do with them?

Part 2:

- Now that your students know more about the Sustainable Development Goals, they're ready to move on to the DIY Module and create a meaningful coding project inspired by *Goal 12: Responsible Consumption and Production*.
- Go to "Page 2" of the tutorial and show students the provided examples:



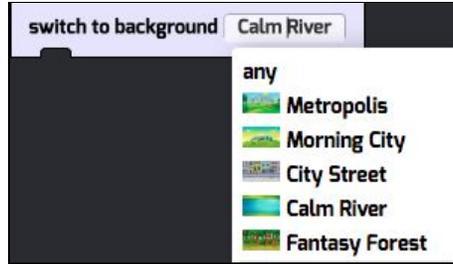
- Optional: Read the Responsible Consumption and Production tutorial out loud to your students.

DIY Module (30 minutes)

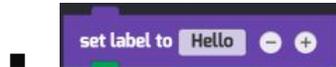
This lesson has one DIY (do-it-yourself) module. Facilitate as students complete the Responsible Consumption and Production module on their own:

Responsible Consumption and Production (DIY)

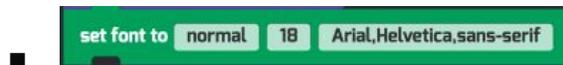
- In this DIY, students will have the option of creating an open-ended project or creating a recycling game where the user needs to drag objects into a recycling bin.
- If students prefer a more structured approach, make sure they follow the step-by-step directions and drag the code blocks from the tutorial tab to the center coding area. If students prefer an open-ended option, inform them that they can skip "Pages 5-7" and add their own code blocks.
- Point out to students that "Page 2" of the tutorial includes two sample projects. They can view the samples and use them as inspiration by clicking (for web)/tapping (for mobile) on the project images.
- *Optional:* Ask students to use their "Goal 12: Responsible Consumption and Production" assignment for ideas on what Actors to draw/add to their project.
- Do students want to draw their own Actors?
 - Direct your students to this link, which includes helpful video tutorials: <https://www.tynker.com/support/videos>.
- Do students want to modify their project? Direct their attention to the bonus activities on "Page 7." Here are some hints to help them get started:
 - **Add more objects-** Students can draw their own Actors or add them using the Media Library.
 - **Choose a different background-** Ask students to draw their own background, add a background, or choose a background from the list:



- **Add headings or labels-** Ask students to explore the "set label to" and "set font to" code blocks. Here's what they look like:



- : This code block will make the specified text (e.g., Hello) appear on an Actor.

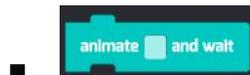


- : This code block will set the font size and style to the specified settings.

- **Add animations-** Ask students to explore the following code blocks:

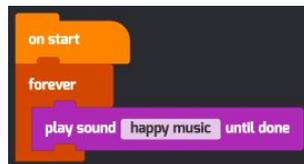


- : This code block will make the Actor perform the specified animation.

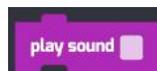


- : This code block will make the Actor perform the specified animation, then wait for the animation to finish.

- **Add music or sound effects-** If students want to add background music, ask them to add a "play sound until done" code block to the Stage. Their code might look similar to this:



If students want to add sound effects, ask them to use the "play sound" code block, which will make their project play the specified sound file. Here's what the "play sound" code block looks like:



Extended Activities

Let's Discuss

Pair up students, then ask them to discuss the following questions:

- Should we throw away gently used toys or clothes? What could we do with them?

- Why do you think it's important to recycle?
- What do you think will happen if trash continues to pollute our oceans?

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>
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.
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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.

How do I open Responsible Consumption and Production?

Have your students go to this URL: tynker.com/hour-of-code

Who is this activity for?

Responsible Consumption and Production is intended for students in grades 3-5 (U.S.) or years 4-6 (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?

- **For web:** Computers, laptops, or Chromebooks (1 per student) with an internet connection
- **For mobile:** iPads or Android tablets (1 per student) with an internet connection

How do my students code their project?

The Responsible Consumption and Production DIY module includes a workspace for students to code their project. The section on the left is a tutorial tab that gives step-by-step directions, describes what is happening in each step, and provides the necessary code blocks. Tell students to follow the step-by-step instructions and drag blocks from the tutorial tab to the center coding area.

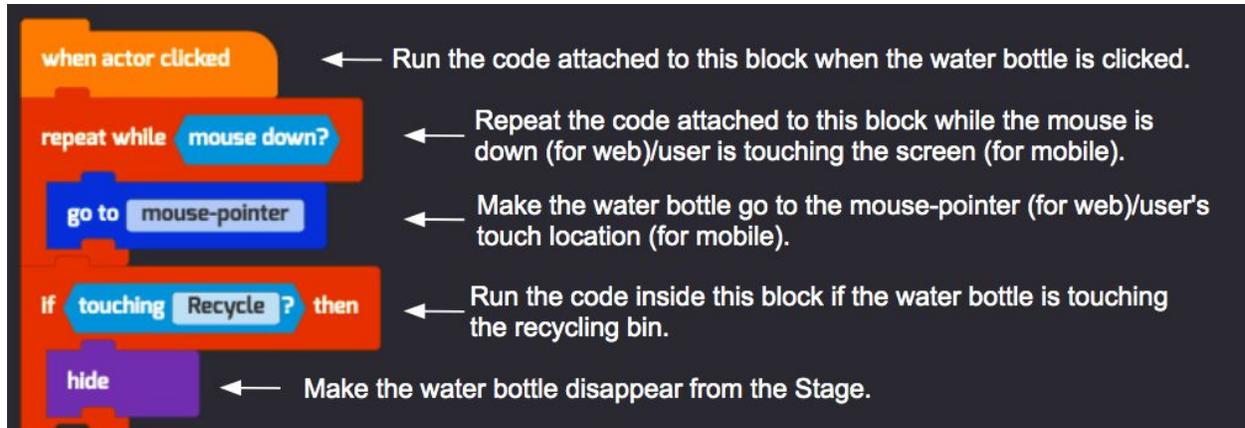
What will my students learn?

Students will explore the meaning behind *Goal 12: Responsible Consumption and Production*, and how they can take an active role in reducing, reusing, and recycling. They will also combine creativity and coding concepts (i.e., simple events, conditional loops, simple motion, simple conditionals, and visibility) to create a project about recycling. Additionally, students are encouraged to expand on their project and modify their code. In this process, students will develop debugging and logical reasoning skills.

What do the code blocks do?

Below is pseudocode for the water bottle Actor:

Water bottle-



The image shows a vertical stack of Scratch code blocks on a dark background. From top to bottom: an orange 'when actor clicked' block, a red 'repeat while' block containing a blue 'mouse down?' block, a blue 'go to' block containing a grey 'mouse-pointer' block, an orange 'if touching Recycle?' block containing a blue 'then' block, and a purple 'hide' block. To the right of each block is a white arrow pointing to the block and a corresponding explanation in white text.

- ← Run the code attached to this block when the water bottle is clicked.
- ← Repeat the code attached to this block while the mouse is down (for web)/user is touching the screen (for mobile).
- ← Make the water bottle go to the mouse-pointer (for web)/user's touch location (for mobile).
- ← Run the code inside this block if the water bottle is touching the recycling bin.
- ← Make the water bottle disappear from the Stage.

How can I contact the Tynker support team?

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