# Groggy Groundhog Teacher Guide



## Summary

- Coding skill level:                    **Beginner**
- Recommended grade level:   **Grades 3-5 (U.S.), Years 4-6 (U.K)**
- Time required:                      **40 minutes**
- Number of modules:              **1 module**
- Coding Language:                 **Tynker Blocks**

## Teacher Guide Outline

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- How to Prepare

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- Overview
- Getting Started (10 minutes)
- DIY Module (30 minutes)
- Extended Activities

**Going Beyond Groggy Groundhog**
- Do More With Tynker
- Tynker for Schools

**Help**

# Welcome!

Mark your calendars! On February 2, people will eagerly wait to see if a groundhog emerging from its winter burrow will see its shadow. As the legend goes, if the groundhog sees its shadow, it will go back underground and we'll get six more weeks of winter. But on a cloudy day, the groundhog will not see its shadow, and spring will come early!

In this lesson, beginner-level coders will follow a step-by-step tutorial where they will create an interactive Groundhog Day game! Activities include adding more time to clear the clouds, hiding the sun behind the clouds, and making the groundhog react to the weather. *How to play:* Click (for web) or tap (for mobile) on the clouds. If the clouds are cleared before the groundhog leaves its burrow, then click (for web) or tap (for mobile) on the sun to cast a shadow around the groundhog. By the end of this lesson, students will have combined creativity with problem-solving skills while reinforcing understanding of coding concepts such as layers, delays, simple conditionals, simple loops, input/output, direction and turning, and simple sound playing.

## 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., Groggy Groundhog), 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. **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.
3. **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 Groggy Groundhog lesson.

# Activity

## Overview

### Objectives

Students will...
- Apply coding concepts to program a sun Actor and a groundhog Actor
- Use code blocks to create an interactive Groundhog Day game

## 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
- **Counting loop:** A loop that repeats one or more commands a specific number of times
- **Condition:** A logical expression that evaluates to true or false
- **Conditional statement:** A type of statement that executes different parts of the code based on whether a logical expression evaluates to true or false

## 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
- **CSTA:** 1B-AP-10, 1B-AP-11, 1B-AP-12, 1B-AP-15
- **CS CA:** 3-5.AP.10, 3-5.AP.12, 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 (10 minutes)

1. Tell students that they are going to create an interactive Groundhog Day game using Tynker!
2. Use your projector to display Groggy Groundhog.
3. Go to "Step 2" of the tutorial and show students the partially completed game.

**How to play:** Click (for web) or tap (for mobile) on the clouds. If the clouds are cleared before the groundhog leaves its burrow, then click (for web) or tap (for mobile) on the sun to cast a shadow around the groundhog.

4. As a class, assess which parts of the game are broken. For example, the user doesn't have much time to clear the clouds before the groundhog surfaces. **Note:** Your students will fix this later in the tutorial by programming the groundhog to wait longer in its burrow.

## DIY Module (30 minutes)

This lesson has one DIY (do-it-yourself) module. Facilitate as students complete the Groggy Groundhog module on their own:

1. **Groggy Groundhog (DIY)**
● In this DIY project, students will program a Groundhog Day game! Tell students to follow the step-by-step instructions and drag code blocks from the tutorial tab to the center coding area.
● Students will need to fix the broken parts of code for the sun Actor and groundhog Actor.
● Do students want to modify their game? Direct their attention to "Step 7" of the tutorial, which includes ideas on how they can add their own creative twist! Here are some hints to help your students get started on the bonus activities:
   ○ **Change the background-** Students can draw their own background or select a background from Tynker's Media Library. What if the groundhog lived on a beach or farm?
   ○ **Make the groundhog do a flip-** Tell students to experiment with the provided "repeat," "turn" and "wait" code blocks, and add it to the "else" case of the groundhog Actor's code. Their modified "else" case might look something like this:

- ○ **Make the groundhog say something different-** Students can change the text inside the "say" code blocks or they can include additional messages by adding more "say" code blocks.
- ○ **Draw on the groundhog's Costume-**
  **For web**, tell students to...
  - ■ Step 1: Select the groundhog Actor's gear icon.

    

  - ■ Step 2: Select the paintbrush.

    

  - ■ Step 3: Use the paint tools to draw on the groundhog. Maybe they can give the groundhog a mustache!
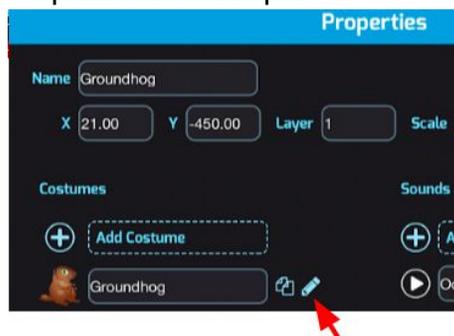
    

  - ■ Step 4: Select "Save."

    

  **For mobile**, tell students to...
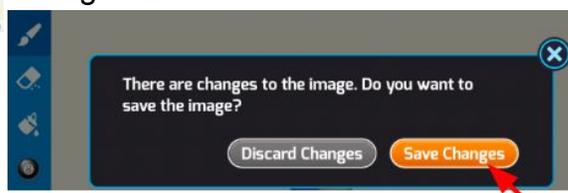  - ■ Step 1: Tap on the groundhog Actor's three circles, then select "Properties."

■ Step 2: Select the pencil.



■ Step 3: Use the paint tools to draw on the groundhog. Maybe they can give the groundhog a mustache!



■ Step 4: Select "Save Changes."

● Are students struggling to execute their modifications?
  ○ Tell students to check out the Tynker support videos: https://www.tynker.com/support/videos, which provide helpful information on topics such as editing a drawing, adding a scene, and adding sound.

# Extended Activities

## Discussion

Reflect on today's coding adventure while encouraging students to use vocabulary terms (i.e., code, sequence, command):

● Have students share their coding challenges, and what they learned from them. Also share other challenges you saw students dealing with and the solutions you noticed they came up with.
● Ask students if the "if-else" code block is an example of a loop or a conditional statement. (Answer: conditional statement)
● Can anyone give an example of a conditional statement? (Example: If I complete all my chores, then I can go to the movies this weekend.)

- Ask students if the "repeat" code block is an example of a loop or a conditional statement. (Answer: loop)
- Can anyone give an example of a counting loop? (Example: Jump three times.)

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# Going Beyond Groggy Groundhog

If your students enjoyed Groggy Groundhog, 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.

## 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 Groggy Groundhog.

## How do I prepare for Groggy Groundhog?

1. **Familiarize yourself with the material.** After selecting your Tynker lesson (e.g., Groggy Groundhog), 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.
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## Who is this activity for?

Groggy Groundhog is intended for students in grades 3-5 (U.S.) or years 4-6 (U.K.) with some coding experience.

## How do my students play Groggy Groundhog?

Students will begin by completing a step-by-step tutorial where they program an interactive Groundhog Day demonstration. Next, students will play and customize their game.

- *How to play:* Click (for web) or tap (for mobile) on the clouds. If the clouds are cleared before the groundhog leaves its burrow, then click (for web) or tap (for mobile) on the sun to cast a shadow around the groundhog. Can your students clear the clouds in time so the groundhog sees its shadow?

## 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 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

## What will my students learn?

Students will combine creativity and coding concepts (i.e., layers, delays, simple conditionals, simple loops, input/output, direction and turning, and simple sound playing) to create an interactive Groundhog Day game! "Step 7" of the tutorial includes a bonus section that encourages students to expand on their project while experimenting with new code blocks. In this process, students will develop debugging and logical reasoning skills.

## How do my students code their project?

The Groggy Groundhog DIY module includes a workspace for students to code their game. The section on the left is a tutorial tab that provides step-by-step directions, describes what is happening for 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.
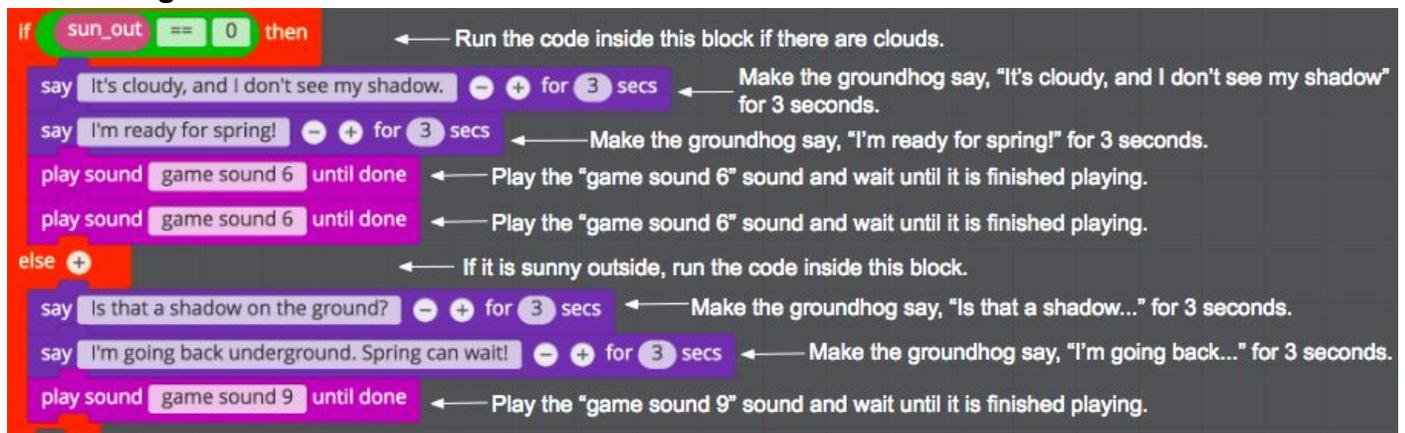
## What do the code blocks do?

Below is pseudocode for the sun Actor and groundhog Actor:

**Sun-**
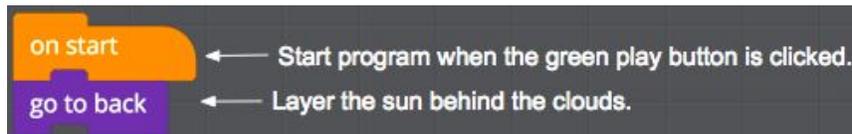


**Groundhog-**



## How can I contact the Tynker support team?

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