

Fool's Gold Teacher Guide



Summary

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| ● Coding skill level: | Intermediate |
| ● Recommended grade level: | Grades K-5 (U.S.), Years 1-6 (U.K.) |
| ● Time required: | 50 minutes |
| ● Number of modules: | 1 module |
| ● Coding Language: | Block-based |

Teacher Guide Outline

Welcome!

- How to Prepare

Activity

- 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!

Who's ready for some April Fools' Day educational fun?! In this lesson, students can fool their friends by using Tynker to create an underwater treasure hunt with a surprising ending. They'll need to program a mermaid to follow the mouse pointer (for web) or touch location (for mobile); program a treasure chest to jump to a different location on the screen after the mermaid touches it; and turn the treasure chest into a shark. Coding concepts include simple loops, simple events, delays, simple conditionals, simple variables, simple motion, basic math, advanced costume handling, text handling, functions, and input/output. **Note:** Students are provided the necessary code blocks to complete the 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., Fool's Gold), 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 Fool's Gold lesson.

Activity

Overview

Objectives

Students will...

- Apply coding concepts such as simple loops, simple events, delays, simple conditionals, simple variables, simple motion, basic math, advanced costume handling, text handling, functions, and input/output
- Use code blocks to create a Fool's Gold 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
- **Sequence:** The order in which steps or events happen
- **Command:** A specific action or instruction that tells the computer to do something
- **Condition:** A logical expression that evaluates to true or false
- **Loop:** An action that repeats one or more commands over and over
- **Conditional loop:** A loop that performs an action if a certain condition is met
- **Infinite loop:** A loop that repeats forever and does not end until the program stops

U.S. Standards

- **CCSS-ELA:** RI.K.1, RI.K.10, RF.K.4, SL.K.1, RF.1.4.A, RI.1.10, SL.1.1, RF.2.4.A, RI.2.5, SL.2.1, RI.3.7, RF.3.4.A, SL.3.1, RF.4.4.A, RF.1.4.A, SL.4.1, RF.5.4.A
- **CCSS-Math:** MP.1, K.CC.A.3, K.CC.B.4
- **CSTA:** 1A-AP-09, 1A-AP-10, 1A-AP-11, 1A-AP-14, 1A-AP-15, 1B-AP-10, 1B-AP-12, 1B-AP-15, 1B-AP-17
- **CS CA:** K-2.AP.10, K-2.AP.11, K-2.AP.12, 3-5.AP.10, 3-5.AP.11, 3-5.AP.12, 3-5.AP.17
- **ISTE:** 1.c, 1.d, 4.d, 5.c, 5.d, 6.b, 7.c


U.K. Standards

National Curriculum in England (computing):

- **Key Stage 1 (Years 1-2)**
 - Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
 - Create and debug simple programs
 - Use logical reasoning to predict the behaviour of simple programs
 - Use technology purposefully to create, organise, store, manipulate and retrieve digital content
 - Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies
- **Key Stage 2 (Years 3-6)**
 - Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
 - 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)

1. Tell students that they're going to use Tynker to create an underwater treasure hunt with a surprising ending.

2.  Open the Fool's Gold project and go to "Step 1" of the tutorial. Next, click (for web) or tap (for mobile) on the example project image, and use your projector to show students the provided example. **Note:** After the mermaid touches the treasure chest 10 times, the treasure chest turns into a shark!

3. *Optional:* Read the Fool's Gold tutorial out loud to your students.

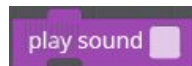
DIY Module (30 minutes)

This lesson has one DIY (do-it-yourself) module. Facilitate as students complete the Fool's Gold module on their own:

Fool's Gold (DIY)

- In this DIY, students will follow step-by-step instructions to create an interactive Fool's Gold project.
- Tell students to drag the provided code blocks from the tutorial tab to the center coding area.
- Do students want to expand on their project? Direct their attention to "Step 7" of the tutorial, which includes additional project ideas. Here are some hints to get them started:

- **Add music-** Tell students to experiment with the "play sound" code block. Here's what it looks like:



- **Change the Treasure or Mermaid costumes-** Students can select a costume from the Media Library or they can draw their own.
- Do students need creative inspiration?
 - Ask them to create a Fool's Gold project inspired by the 1800's Gold Rush. For example, students can select a western background and an explorer Actor. Instead of changing the treasure chest into a shark, they can make the treasure chest reveal fool's gold (pyrite) and include a message that says, "Happy April Fools' Day! You found pyrite!" **Note:**

Students can either change the background and Actors within their Fool's Gold project or create a new project.

Extended Activities (20 minutes)

Two Truths and a Lie

In the spirit of April Fools' Day, play a game of "Two Truths and a Lie" with your students. *How to play:* Each student will get a turn to share three statements about themselves to the class. Two statements must be true and one must be a lie. Can their classmates guess which statement is a lie?

1. Ask students to quietly think of three statements about themselves. Tell them that two statements must be true and one must be a lie. Here are some ideas they can think about: Where have they traveled? Do they have a special talent? How many siblings do they have? What is their favorite food? Do they have pets?
2. Ask a student to share two truths and one lie with the class.
3. Can their classmates guess which statement was the lie? Ask students to raise their hand if they think the first statement was false, then ask them to put their hand down. Repeat this process to see which students believe the second or third statement was false.
4. Once everyone has had the opportunity to guess the lie, ask the student to reveal which statement was false.
5. Repeat "Steps 2-4," making sure everyone has the opportunity to share their three statements with the class.

Going Beyond Fool's Gold

If your students enjoyed Fool's Gold, 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 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 using Fool's Gold.

How do I prepare for Fool's Gold?

1. **Familiarize yourself with the material.** After selecting your Tynker lesson (e.g., Fool's Gold), 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. **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 Fool's Gold lesson.

Who is this activity for?

Fool's Gold is intended for students in grades K-5 (U.S.) or years 1-6 (U.K.) with some coding experience.

How do my students play Fool's Gold?

Students will begin by completing a step-by-step tutorial to create their own Fool's Gold project. From there, students can make the mermaid follow their mouse pointer (for web) or touch location (for mobile) to swim to the treasure chest. After the mermaid touches the treasure chest 10 times, the treasure chest turns into a shark and displays an April Fools' Day message!

What devices do I need?

- **For web:** Computers, laptops, or Chromebooks (1 per student) with an internet connection and an up-to-date browser
- **For mobile:** iPads or Android tablets (1 per student) with an internet connection
- If not enough devices are available, students can work in pairs on the same device

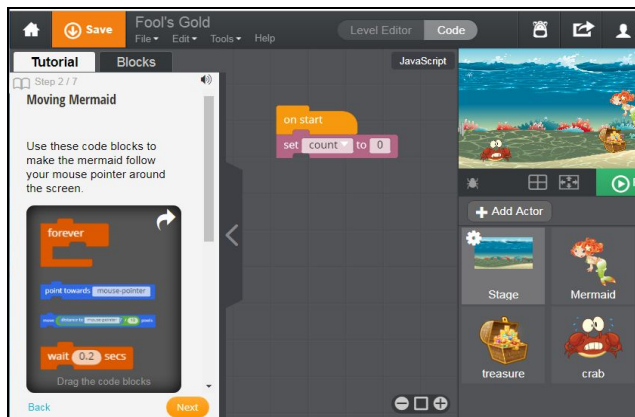
Do I need to create a Tynker Account for my students?

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

What will my students learn?

Students will combine creativity and coding concepts (e.g., simple loops, simple events, delays, simple conditionals, simple variables, simple motion, basic math, advanced costume handling, text handling, functions, and input/output) to create a Fool's Gold project. Students can also expand on their project while experimenting with new and different code blocks. In this process, students will develop debugging and logical reasoning skills.

How do my students code their Actors?



The Fool's Gold DIY module includes a workspace for students to code their project. The section on the left is a tutorial tab that provides step-by-step directions to code Actors, 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 mermaid and treasure Actors:

Mermaid

```

on start ← Start program when the green play button is clicked.
set rotation style left-right ← Set the mermaid to rotate left-right.
forever ← Keep repeating the code inside this loop forever.
  point towards mouse-pointer ← Make the mermaid point towards the mouse pointer (for web) or touch location (for mobile).
  move distance to mouse-pointer ? / 10 pixels ← Make the mermaid move the specified value of pixels forward.
  wait 0.2 secs ← Wait the specified amount of seconds (e.g., 0.2).
  
```

Treasure-

```

on start ← Start program when the green play button is clicked.
set rotation style left-right ← Set the treasure to rotate left-right.
forever ← Keep repeating the code inside this loop forever.
  if touching Mermaid ? then ← Run the code inside this block if the treasure touches the mermaid.
    change count by 1 ← Increase the count value by 1.
    go to x: pick random -500 to 500 y: pick random -300 to 300 ← Move to the specified x (e.g., -500 to 500) and y (e.g., -300 to 300) values.
  if count > 10 then ← Run the code inside this block if the count value is larger than 10.
    shark surprise ← Run the "shark surprise" function.
    break ← Stop playing the loop.
  wait 0.05 secs ← Wait the specified amount of seconds (e.g., 0.05).

shark surprise ← Run the code attached to this block when the "shark surprise" function is activated.
switch to costume shark ← Make the treasure switch to the shark costume.
go to x: -150 y: -150 ← Move the shark to the specified location (-150,-150).
set font to normal 18 Helvetica ← Set the text to the specified settings.
set bubble width to 30 % ← Set the size of the bubble's width to 30%.
say HAPPY APRIL FOOLS' DAY! ← Make the shark say "Happy April Fools' Day!"
  
```

How can I contact the Tynker support team?

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