

## **Turing Tumble: Build Marble-Powered Computers**

GRADE LEVELS:	2024-2025 STEM Scale-Up Program Summary:
3-12	Turing Tumble is a revolutionary STEM game that teaches how computers work at a
	fundamental level. Students build marble-powered, mechanical computers to solve a series of
Educational Setting:	structured logic puzzles, using their own hands instead of a screen. It looks like a fun marble
Both in school and out of	run, has an engaging graphic novel woven through the puzzle book, and is the first STEM
school.	curriculum solution that allows
	students to grasp the fundamentals
A	of how a computer works by hearing,
Award Provides:	seeing, feeling, and programming a
including everything	mechanical computer.
required for play &	
instruction:	With Turing Tumble, students learn
• 15 kits for 30 students	how to use logic to solve problems. In
6 marble reloaders     6 ovtra parta packa	the process, they discover now
<ul> <li>General parts packs</li> <li>Educator Guide PDE</li> </ul>	coaing works while building
<ul> <li>4 hr. in-person</li> </ul>	
training	Click here to see Turing Tumble in
<ul> <li>\$50 Visa gift card</li> </ul>	action
Implementation Time:	Materials Include:
May be used for full-	30-Student Bundle: Turing Tumble
semester programming	games, Marble Reloaders, extra
or as an extension	parts, complete puzzle books, and
activity	PDF of the Educator Guide
Additional Cost(s) to	Requirements to Implement the
Awardee in 2024-2025:	Program:
None	Attend a 4-hour, in-person
	professional development
Approvimate	session (date TBD) in July of August.
Sustainability Cost	• Educator(s) must participate in the STEW Council Scale-Op Educator Survey.
After Award Period:	Professional Development:
None. Extra parts	Duration: Half-day (A hours) of training
included.	Date(s): Dates will be appounded in April 2024
	Location: Trainings will be held in each of the six STEM Regions
	Classroom Videos:
	See how it works
	Introduction to classroom use
	Getting Started
	How Turing Tumble is a Computer

 Website:
 Iowa Standards Alignment:

 www.upperstory.com
 Turing Tumble meets standards in computer science, science, math and 21st Century Skills.

 Turing Tumble meets CSTA standards in the concept area for programming and algorithms solidly through grade 5.

Follow this <u>link</u> for standards alignment for the following:

- Social Media:

@UpperStoryCo @UpperStoryCo @Upper\_Story @UpperStory

@EndlessCuriosity

@UpperStoryCo

Informational Webinar(s):

Registration Link: https://forms.gle/D5Ny8o ZHnB4EyH939

Wed., Jan. 17, 11:30am <u>Zoom Link</u>

Thurs., Feb. 1, 4:30pm Zoom Link

Tues., Feb. 20, 7:00pm <u>Zoom link</u>

One attendee at each webinar will win a free copy of <u>Spintronics!</u>

A recorded webinar will be available Jan. 18.

- CSTA
  - NGSS
  - lowa's Academic Standards
  - 21st Century Skills



Different Ages. Deeper Learning. Enjoyed by grades 3-12 and beyond.

Kids and teens learn best when they use their senses to explore new concepts. Turing Tumble teaches computational thinking, coding strategy, algorithms, programming, and other abstract concepts in a fun, tangible way that is hands-on and screen-free.

## **Educator Resources Include:**

Follow this <u>link</u> for our educator resources described below:

- Educator Guide: A companion guide to assist educators in guiding students through the first 30 puzzles. It offers:
  - computer logic lessons
  - breakdown of concepts with classroom tips
  - troubleshooting suggestions for each puzzle
- **Classroom Videos:** Quick, engaging videos to get your students started and to walk through the differences between a mechanical computer and its electronic counterpart.
- **Practice Guide:** A detailed guide to ensure you're equipped to answer student questions. Including:
  - o descriptions of how each challenge works to cement important concepts
  - black and white printables to share with the class
  - 30 extra puzzles to help bridge gaps and solidify what they've already learned
- Educator Blog: Whether you are a teacher, an administrator, a librarian, or an after school professional, our blog articles are a resource to incorporate Turing Tumble in your classroom or program. Explore our <u>lesson plans</u> on how to get started.

Questions? Contact us at <u>hello@upperstory.com</u>

STEM Scale-Up Program Application Link: <u>www.lowaSTEM.org/Scale-Up-Application</u>