



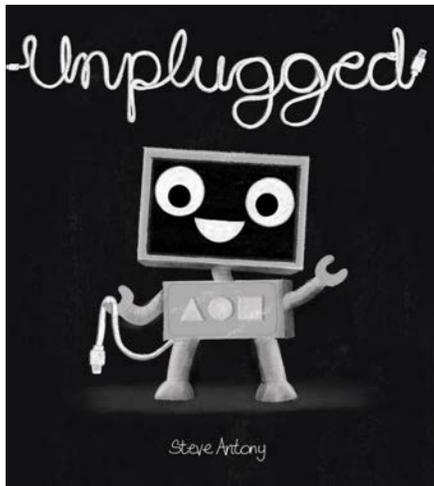
# Tech (S.T.E.A.M.)



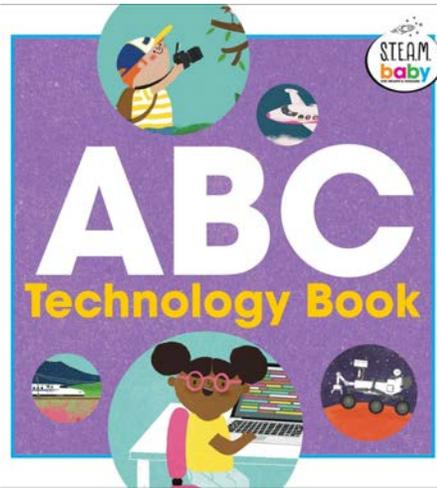
# Technology

Engaging with technology provides children with essential skills for navigating the modern world. By learning to code, interact with digital tools, and understand the principles behind technological devices, children gain the tools they need to thrive in an increasingly digital society, enhancing their adaptability and innovation. Technology can be tangible, such as computers and machinery, or intangible, such as software, algorithms, and systems. Technology can foster collaboration and communication skills as children often work together to solve problems and create projects.

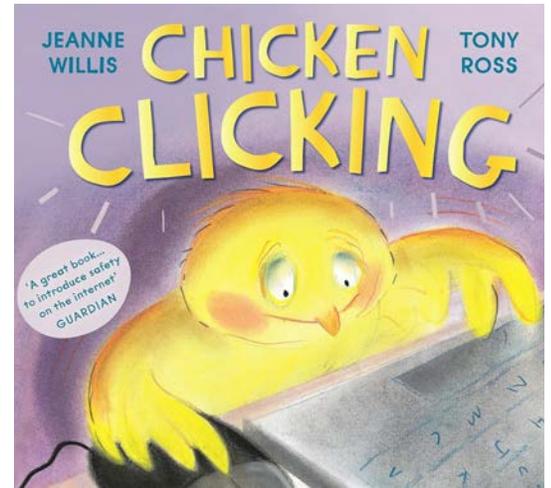
## Books We Love That Support Technology Concepts:



**Unplugged,**  
by Steve Antony



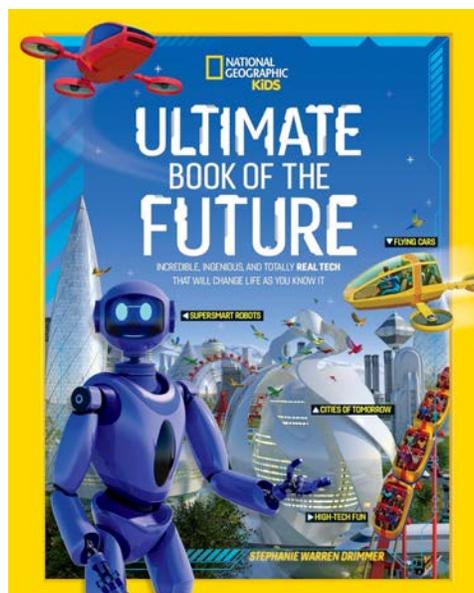
**ABC Technology Book,**  
by Sage Franch



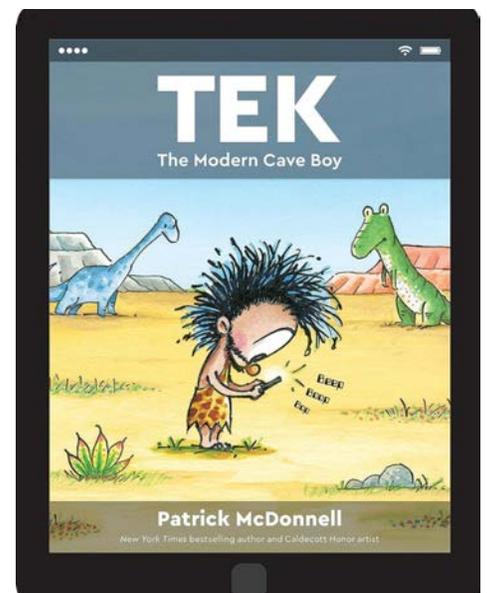
**Chicken Clicking,**  
by Jeanne Willis



**Boy + Bot,**  
by Ame Dyckman



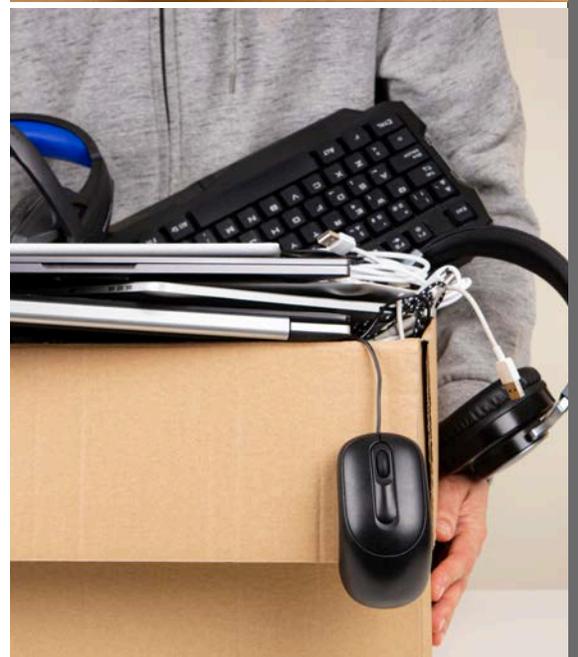
**Ultimate Book Of The Future,**  
by Stephanie Warren Drimmer



**Tek, The Modern Cave Boy,**  
by Patrick McDonnell

# 20 Materials to Support Technology Exploration

1. Robotics kits (e.g., LEGO Duplo My First Robot)
2. Coding cards or blocks (e.g., Code-a-Pillar)
3. Circuit building kits (e.g., Snap Circuits Jr.)
4. Digital cameras or kid-friendly cameras
5. Flashlights and batteries (child can assemble)
6. Stop motion animation kits
7. Interactive storybooks with buttons
8. Programmable toys like Bee-Bot
9. Light-up building blocks (e.g., Mega Bloks)
10. Musical instruments with colorful buttons
11. LED light-up drawing boards
12. Interactive talking globes or maps
13. Magnifying glasses with built-in lights
14. Kid-friendly walkie-talkies
15. Simple electronic toys with buttons
16. Toy cash registers with calculators
17. Storytelling podcasts
18. Recycled computers or laptops
19. Tube lighting for play spaces
20. Child-friendly remote-controlled vehicles





# Capture and Create a Story (Photography)

## MATERIALS

- One device to take pictures
- Optional:
  - Printer
  - Notepad or computer to document their story

## DIRECTIONS

- Invite children to take pictures of various objects, places, people, or places - whether inside or outside.
- You may lead with some ideas including, "let's go out for a walk! Along the way, I wonder what you may want to take pictures of?"
- After they've taken some pics, you may prompt with questions:
  - "What inspired you to take a picture of \_\_\_\_\_?"
  - "What story can you tell about this picture?"
- Depending on the number of pictures taken, you may welcome them to select some to print.

## LEARNING OBJECTIVES

- Learn the basic functions of a camera, including how to turn it on/off, adjust settings like zoom and focus, and capture images or videos. This **promotes technical literacy and familiarity with digital tools.**
- Explore the artistic possibilities of photography, experimenting with composition, perspective, and framing to convey emotions or tell stories visually. **Encourages creative thinking and self-expression.**
- Use photography as a means of documenting experiences, events, and memories, creating a visual record that can be revisited and shared with others. **Enhances memory recall and storytelling abilities.**



## Cozy-up with Technology

### MATERIALS

- LED string lights or light strips
- Flashlights
- Interactive storybooks (books with buttons, sound effects, or interactive features)
- Cozy blankets or cushions
- Pillows
- Battery-operated tea light candles (optional)

### DIRECTIONS

- Create a cozy corner with soft rugs, cushions, and blankets.
- Hang LED lights for gentle lighting and place flashlights and battery-operated candles nearby.
- Set out interactive storybooks and encourage independent or group exploration.
- Provide opportunities for children to experiment with lights and flashlights.

### LEARNING OBJECTIVES

- **Technology Exploration:** Children will engage with various technological tools such as LED lights, flashlights, and interactive storybooks, developing familiarity with different forms of technology and their functions. They will learn how to operate simple electronic devices, manipulate light sources, and interact with digital interfaces.
- **Sensory Exploration:** Children will explore the sensory properties of light, including brightness, color, and intensity. They will observe how light can be manipulated to create different effects and stimulate their senses through visual experiences.
- **Literacy Engagement:** Children will engage with interactive storybooks, developing early literacy skills such as listening comprehension, vocabulary development, and narrative understanding.



# Let's Make Mazes (Coding Concepts)

## MATERIALS

- Items to create a maze.  
Consider: Blocks, legos, cardboard boxes, magna tiles, or even a drawing of a maze over paper.
- Items to go through a maze.  
Consider: Balls, marbles, cars, toy people, coloring utensil (if doing a maze over paper).

## DIRECTIONS

- Begin to create a maze for children to complete.
- After children have observed how a maze can be constructed out of various materials, you may then invite them to create a maze of their own.
- If you find that it's hard to create a complex maze for your child, you can try drawing a more intricate one to increase the challenge.
- On other occasions, explore creating new mazes with various materials (e.g. twigs/sticks at a local park).

## LEARNING OBJECTIVES

- **Technology Integration:** By incorporating hands-on maze construction with materials like LEGO or blocks, children will develop an understanding of how technology components can be used to create interactive and engaging experiences, laying the foundation for future technology exploration and innovation.
- **Coding Concepts:** Through hands-on play and exploration, children will gain an understanding of fundamental coding concepts such as sequencing, loops, and conditional statements as they design and navigate their DIY maze.
- **Problem-Solving Skills:** Children will develop problem-solving skills as they design and construct their DIY maze, experimenting with different configurations and overcoming obstacles to create a functional maze.
- **Persistence and Resilience:** Children will practice persistence and resilience as they encounter challenges and setbacks during maze construction, fostering a growth mindset and perseverance.



# Virtual Field Trip - Into the Ocean!

## MATERIALS

- Computer or laptop
- Internet connection
- Virtual reality or augmented reality ocean exploration software or app:
  - Google Earth VR
  - Ocean Rift
  - TheBlu
  - National Geographic Explore VR

## DIRECTIONS

- Set up the digital device with access to the chosen virtual reality ocean exploration software or app.
- Ensure a stable internet connection for seamless navigation and select the ocean exploration experience.
- Encourage children to explore the virtual ocean environment using the controls provided (e.g., mouse or touchscreen gestures for computers/tablets).
- Facilitate discussions and encourage children to ask questions about what they see and experience during the virtual field trip.
- **And adult should always be present and guiding this experience.**

## LEARNING OBJECTIVES

- **Develops digital literacy skills** by using virtual reality or augmented reality technology to explore and interact with virtual environments.
- Experiments with how **technology can be used to simulate real-world experiences and enhance learning opportunities**, fostering curiosity and engagement.
- **Understands the importance of ocean conservation and biodiversity preservation**, while learning about different marine habitats and ecosystems.
- **Explores different regions of the ocean and learn about their geographical features**, such as continental shelves, ocean currents, and underwater volcanoes.



# Walkie Talkie Adventures

## MATERIALS

- Walkie-talkies
- Open space for outdoor play or designated play area indoors
- Optional: Maps or scavenger hunt lists for themed adventures

## DIRECTIONS

- Start by showing children the walkie-talkies and explaining that they can use them to talk to each other, just like real-life adventurers or secret agents!
- Allow children to explore the walkie talkie features and decide where they want to go for their adventure. They can explore the backyard, playground, or any other safe area you have available.
- You may provide a few suggestions for adventure themes, such as exploring a jungle, going on a treasure hunt, or embarking on a space mission, but ultimately let the children decide how they want to play.

## LEARNING OBJECTIVES

- **Technological Literacy:** Children will develop basic technological literacy skills as they learn to operate and communicate using walkie-talkies, understanding concepts such as transmitting and receiving signals, using buttons and controls, and troubleshooting simple issues.
- **Problem-Solving:** Children will engage in problem-solving and critical thinking as they navigate obstacles, make decisions, and adapt their strategies during the game.
- **Communication Skills:** Children will practice effective communication skills as they use walkie-talkies to relay messages, give directions, and coordinate their movements with their partners.
- **Imagination and Creativity:** Children will exercise their imagination and creativity as they role-play different scenarios and characters, immersing themselves in imaginative play adventures.



# Scavenger Hunt (Coding & Algorithm Concepts)

## MATERIALS

- Objects to be hidden (3-5 items)
- Map of the designated space
- Paper and pen for drawing out the map/directions
- Optional: Timer or stopwatch

## DIRECTIONS

- On a piece of paper, write down the directions you will read out loud to the children on how they can find the hidden objects:
- Object #1: (Start at the red table. Take 6 big steps towards the bookshelf. Turn to your right and take 10 steps toward the white basket. Crawl across the room until you reach the window sill. Stand up, jump three times and lift up the pillow!
  - Repeat for all hidden objects.
  - For an alternative scavenger hunt, illustrate a visual treasure map for your child to follow.

## LEARNING OBJECTIVES

- **Algorithmic Thinking:** Participants will practice breaking down a series of instructions (directions) into smaller, sequential steps to achieve a goal (finding hidden objects).
- **Spatial Reasoning:** Through following directions on the map, participants will develop spatial awareness and understanding of directional concepts such as left, right, forward, and backward.
- **Sequence and Order:** By following step-by-step directions, participants will learn the importance of sequencing actions in a specific order to achieve a desired outcome, similar to coding or programming concepts.
- **Problem-solving Skills:** Participants will use critical thinking and problem-solving skills to navigate the space and overcome obstacles (e.g., furniture) to find the hidden objects.