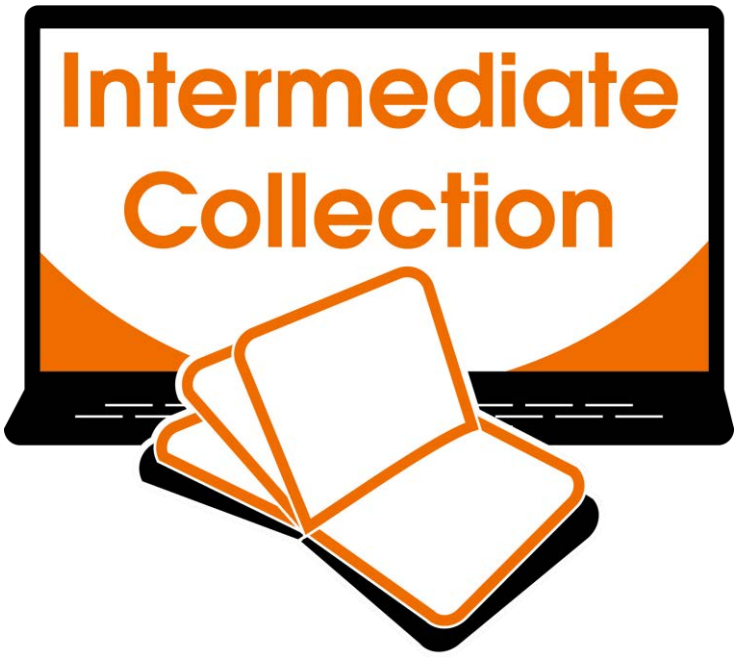
https://www.technokids.com/store/collections/computer-lesson-for-middle-school.aspx

# TECHNOKids®

# INTERMEDIATE

## Curriculum Collection




PROJECT-BASED LESSONS: DIGITAL LITERACY AND STEM ACTIVITIES

A collection of technology projects for
Microsoft Office, Google Docs, programming, and more!

# Contents

# Overview

TechnoKids Technology Projects are instructional materials that apply an interdisciplinary, project-based approach to learning. The activities support STEM education. Lessons are designed to achieve both digital literacy and academic curriculum objectives. Technology projects can be integrated into curriculum as a technology course, unit of study, workshop series, or after-school class.

This Overview contains the following:

- About TechnoKids – a description of technology projects, integration, ICT/STEM skills, and the site license
- Tips for Getting Started – helpful information to select a project, use PDF files, and access support
- Technology Projects and Software – an outline that correlates software to projects
- Technology Project Matrix – a recommended sequence for implementing the projects organized by level
- Project Descriptions – a detailed explanation of each project
- Helpful Resources – links to information
- Contact Information – free curriculum support by phone or email

# About TechnoKids

### What Is a Technology Project?

A technology project is a set of activities that have students create a *project* such as a launching a business venture, promoting a theme park, coding a game, or drafting a budget. Project-based learning is an instructional approach that poses challenging questions or presents real-world, meaningful problems. Students investigate these issues, propose solutions, and design original creations.

A technology project includes a teacher guide, student workbook, and resource files:

- A teacher guide has lesson plans for teacher use. It contains technology integration ideas, preparatory steps, learning objectives, assignments, and answer keys.
- A student workbook is a collection of assignments with illustrated step-by-step instructions for student use.
- Resource files are customizable materials such as templates, sample files, parent letters, certificates, program flashcards, and assessment tools. There are both teacher and student resources.

### How Can I Integrate Technology Projects into Curriculum?

TechnoKids Technology Projects include activities that integrate into subject areas such as language arts, mathematics, social studies, visual arts, science, history, geography, computer science, or business studies. Refer to the *Technology Integration Ideas* section in each teacher guide for suggestions. Technology projects correlate to Common Core Standards.

### What Technology Skills Do Students Learn?

TechnoKids Technology Projects support STEM education. The lessons teach word processing, spreadsheet, graphic design, presentation, programming, web design, internet, digital literacy, animation, and data management skills. Students gain proficiency in Information Communication and Technology (ICT). Refer to the *Skill Summary* in each teacher guide for learning objectives. Technology projects correlate to ISTE Standards.

### What Is a TechnoKids Site License Agreement?

TechnoKids Technology Projects are sold as a site license. A site is a single school or learning center. The site license permits unlimited printing/viewing rights of the teacher guides and student workbooks as well as unlimited transfer of digital files to devices at a given location (site) to authorized users. It prohibits posting files in the public domain. Refer to your Site License Agreement for further details.

# Tips for Getting Started

### Start Teaching in 5 Easy Steps

Are you ready to teach a TechnoKids project? Here's how in 5 easy steps:

Step 1 Get Your Files
Step 2 Install a PDF Viewer
Step 3 View a Project Folder
Step 4 Refer to Getting Started in the Teacher Guide
Step 5 Share Resources with Students

### How Do I Select a Project to Teach?

There are a wide range of technology projects. Select one that is right for your students:

- Level – Match a technology project to its recommended grade level. Technology projects are categorized as Primary (Grades 1-3), Junior (Grades 3-6), Intermediate (Grades 6-9), or Senior (Grades 8-12).
- Technology Skill – Choose an option based on the ICT or STEM skills required for your program. Technology projects include activities that teach word processing, spreadsheet, graphic design, presentation, programming, web design, digital citizenship, animation, and data management skills.
- Subject Area – Blend technology into curriculum. Create a product that is specific to a subject area such as digital storytelling for language arts, timeline for history, or interactive map for geography.
- Topic – Integrate into a current unit of study. Many technology projects are open-ended. This provides an opportunity to blend curriculum content with digital learning tools.
- Student Interest – Engage learners. Have them select a technology project that is personally meaningful. Alternatively, the teacher can choose a title, such as TechnoJournal or TechnoSite, that allows students to select a topic of interest.

### About TechnoKids PDF Files

Teacher Guides, Student Workbooks, and some resource files are in PDF format. They have been locked against editing but can be printed, viewed, and annotated. Refer to the following tips to get started:

- If you are a Windows user, install Adobe Acrobat Reader.
- If you are a Chromebook user, install a PDF Chrome extension such as KAMI.
- If you do not have install privileges for your device, contact your System Administrator.

### About the Student Workbook

The Student Workbook is available in two formats: complete workbook and individual worksheets.

- Complete Workbook: This format is designed to be printed double-sided. Place the document in a binder as a reusable class set. Or, print single use copies for each student to follow instructions and answer questions.
- Individual Worksheets: This format has each assignment separately. Control the pace of instruction by assigning a worksheet for each class session. Or, challenge students working at a faster pace with optional enrichment activities. Worksheets can be printed or used digitally.

### Where Can I Get More Support?

- Windows Users: Learn how to extract files, install Acrobat Adobe Reader, and annotate worksheets.
- Chromebook Users Learn how to extract files, install a PDF Chrome extension, and annotate worksheets.
- Google Classroom Users Discover how to create a class, share assignments, grade student work, and more!

# Intermediate Technology Projects and Software

TechnoKids Technology Projects are available for Microsoft Office, Office for the Web, Google Docs, and programming. Refer to the table to identify projects that are right for you!

| | Microsoft Office | | | | | Office for the Web | | | | Google | | | | | | | Programming | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Suggested grade levels: | Paint | Word | PowerPoint | Excel | Publisher | Word Online | PowerPoint Online | Excel Online | Forms for Excel | Drawings | Docs | My Maps | Slides | Sheets | Sites | Forms | Text Editor | Scratch | Python 3 |
| **Intermediate Grades 6-9** | | | | | | | | | | | | | | | | | | | |
| TechnoBiography | | • | | | | • | • | | | • | • | | | | | | | | |
| TechnoBot AI | | | • | | | | | | | | | | • | | | | | • | |
| TechnoBudget | • | • | | • | | • | | • | | • | • | | | • | | | | | |
| TechnoCode | | | | | | | | | | | | | | | | | | • | |
| TechnoDebate | | | | | | • | • | | | | • | | • | | | | | | |
| TechnoEarth | | | | | | | | | | • | • | • | • | • | • | | | | |
| TechnoEnvironment | | • | | | • | | | | | | | | | | | | | | |
| TechnoHTML 5 | | | | | | | | | | | | | | | | | • | | |
| TechnoMap | | • | • | | | • | • | | | | • | | • | | | | | | |
| TechnoNewsletter | | • | | | | • | | | | | • | | | | | | | | |
| TechnoPython | | | | | | | | | | | | | | | | | | | • |
| TechnoQuestionnaire | | | | | | | | | | | | | | • | | • | | | |
| TechnoRestaurateur | | • | • | • | | • | • | • | • | • | • | | • | • | | • | | | |
| TechnoTravel | | • | • | • | | • | • | • | | | • | | • | • | | | | | |

# Intermediate Technology Projects | Scope & Sequence

Intermediate technology projects are for middle or high school students. They develop proficiency in using technology.
Activities emphasize critical, creative, and computational thinking. Students design publications, analyze data, build web pages, program games, and more!

| | COMPUTER APPLICATIONS \| DIGITAL LITERACY | | | | COMPUTER SCIENCE |
|---|---|---|---|---|---|
| Grades 6/7 | TechnoNewsletter<br>Publish a fan club newsletter. Write an informative article, construct a word search, and express an opinion. Format pages to lay out content attractively.<br>*Word or Docs*<br>language arts; word processing | TechnoRestaurateur<br>Launch a business venture. Plan a restaurant, create a logo, conduct a survey, generate funds, build a floor plan, manage finances, and more!<br>*Excel/PowerPoint/Word or Sheets/Slides/Docs/ Drawings/Forms*<br>entrepreneurship; integrated unit | TechnoTravel<br>Promote a weekend getaway for tourists. Research the trip. Customize a slide master to create a unique marketing tool that persuades visitors to vacation.<br>*Excel/PowerPoint/Word or Sheets/Slides/Docs*<br>language arts, geography; presentation | **COMING SOON** TechnoCommercial<br>Produce a commercial using proven marketing and production techniques. Storyboard a concept, record the action, and edit the footage. Export the video.<br>*Blender*<br>video production | TechnoCode<br>Spark an interest in computer science. Design an Activity Studio for kids using Scratch. Build blocks of code to design animations, puzzles, stories, and games.<br>*Scratch*<br>math, language arts; coding |
| Grades 7/8 | TechnoBiography<br>Celebrate a remarkable person. Format the bio using styles, graphic organizer, and artifacts table. Build a table of contents. Cite sources in a bibliography.<br>*Word or Docs/Drawings*<br>language arts, history; word processing | TechnoBudget<br>Justify a spending plan for a shopping trip. Calculate, and graph data to form a budget. Report financial choices and explain money management strategy.<br>*Excel/Paint/Word or Sheets/Drawings/Docs*<br>financial literacy; spreadsheets | TechnoMap<br>Highlight the importance of a location by constructing an interactive map. Connect facts about an area or issue using markers and hyperlinks.<br>*PowerPoint /Word or Slides/Docs*<br>geography, history; presentation | | TechnoHTML5<br>Develop a web page using HTML and CSS. Write code to set the style of the background, text, lists, graphics, hyperlinks, and tables. Upload to the Internet.<br>*Notepad or other text editor*<br>web design; coding |
| Grades 8/9 | TechnoEarth or TechnoEnvironment<br>Raise awareness of an environmental issue. Design either an infographic with Google apps or a pamphlet with Publisher. Advocate for change.<br>*Word/Publisher or Docs/Sites/Slides/ Sheets/My Maps/Drawings*<br>geography, science; publishing, presentation | TechnoQuestionnaire<br>Investigate a research question. Select a sample and construct a questionnaire. Conduct a pre-test to tweak the design. Analyze data to interpret findings.<br>*Google Forms*<br>research; data management | TechnoDebate<br>Collaborate with a partner to debate an issue. Create an animated conversation that presents a persuasive argument. Defend a position.<br>*PowerPoint Online or Slides*<br>language arts, debate techniques; presentation | TechnoPython<br>Program a series of games using Python including Pet Monster Rescue, Guess It, and Adventure Quest. Share your favorite one in a coding presentation.<br>*IDLE Python 3*<br>math, language arts; programming | TechnoBot AI<br>Program a drone delivery system, robot pick-up service, and self-driving tour that solve real world problems using artificial intelligence.<br>*Scratch, PowerPoint or Slides*<br>programming, artificial intelligence |

# Intermediate Technology Project Descriptions

## TechnoBiography

In this project, students become biographers writing about a person's life story. To start, they research a notable figure who has made a difference in the world. Once familiar with events and achievements, students summarize a personal history using heading styles to organize events logically. Contributions are highlighted using a graphic organizer. To help readers connect with the person, artifacts with links to additional information are arranged in a table. Sources of information are cited using a bibliography. Upon completion, the biography is shared with readers.

The technology project contains the following assignments:

- Assignment 1 What is a Biography?
  Examine sample biographies to acquire insight into the role of a biographer.
- Assignment 2 Brainstorm a Topic
  Generate names of notable people. Select a topic. List inquiry questions.
- Assignment 3 Research using Tertiary Sources
  Consult an encyclopedia to locate basic facts. Classify information using an organizer.
- Assignment 4 Research using Secondary Sources
  Gain in-depth knowledge of the person's life from quality websites. Track information sources.
- Assignment 5 Research using Primary Sources
  Identify significant artifacts associated with the person such as a speech, diary, or medal.
- Assignment 6 Research Checklist
  Confirm readiness to write biography by completing a checklist.
- Assignment 7 Create a Title Page
  Apply word processing skills to design a title page for the biography.
- Assignment 8 Set the Document Structure Using Styles
  Set document structure with heading styles. Customize styles and insert a table of contents.
- Assignment 9 Write a Personal History
  Synthesize research to summarize the person's early life, family, education, and career.
- Assignment 10 Make a Graphic Organizer of Contributions
  Showcase the importance of the person's accomplishments using an eye-catching diagram.
- Assignment 11 Design a Media Gallery using a Table
  Highlight the contributions of a person using artifacts. Link readers to additional information.
- Assignment 12 Cite Sources in a Bibliography
  Document sources of information in a bibliography. Practical tips help to format the list.
- Assignment 13 Biography Checklist
  Self-evaluate the biography using a checklist. Revise the content based on the examination.
- Assignment 14 Share Your Biography with Readers
  Reflect on the learning experience. Respond to questions about the person's life or legacy.

*Extension Activities*:
Insert a Video, Customize Page Layout, Connect to Artifacts using a Bookmark*, Make a Bumper Sticker, Create a School Award

*Technology Skills*: Word Processing, Graphics
*Technology Integration*: History, Language Arts, Social Studies
*Software Applications*: Word | Word Online | Docs, Drawings

**Note*: Select extension activities are not available for all product versions.

## TechnoBot AI

In this project, students become artificial intelligence specialists. They apply a design thinking model to imagine creative solutions to real-world problems. Using Scratch, they build prototypes of their inventions. These include a drone delivery system, robot pickup service, and self-driving tour. Afterwards, they present one of their AI prototypes as an investment opportunity. Throughout the project, they reflect upon the possibilities and limitations of AI technologies.

The technology project has 24 assignments that are divided into 6 Sessions:

- Session 1 Introduction to AI
  In this session, students become artificial intelligence specialists. This role requires them to solve problems using AI and Scratch. The fun begins with an exploration of AI in daily lives. Next, they register for a Scratch account and discover how to use coding blocks to create a simple animation. They will apply this knowledge in upcoming sessions to program a drone delivery system, robot pickup service, and self-driving tour.
- Session 2 Flying Machines at School
  In this session, students develop a prototype of a drone delivery system that uses AI. It must solve a common problem at school. Using Scratch, students build a simple program that flies a sprite-drone to collect items and then return to its original start point. They will refine the code to adjust to new delivery locations and object movement. How can students improve the lives of teachers?
- Session 3 Robot Pickup Service
  In this session, students invent a robot pickup service that kids can use to quickly get items from a smart locker. The locker could store food, books, or gym equipment. The process will be contactless. A user will receive a secret code to unlock a specific box. If the wrong code is entered, an error message will display. Students will use Scratch to build a model of their AI prototype. How can they improve the lives of kids?
- Session 4 Self-Driving Tour
  In this session, students become computer vision specialists. They design a self-driving tour. It must meet the needs of both business owners and tourists. Using Scratch, students will build a program that drives an autonomous vehicle along a route from one exhibit to another. At each stop, a robot will share interesting facts. The tour could take place at a zoo, theme park, or city center.
- Session 5 Obstacle Detection
  In this session, students improve the safety of their self-driving tour. They program their autonomous vehicle to avoid obstacles along the route. Afterwards, both business owners and tourists test the design to provide feedback. Once it is ready, students invite others to take a robot guided tour and provide a customer review. How does the invention enhance the lives of others?
- Session 6 Investment Opportunity
  In this session, students create a presentation for potential investors. They are seeking funding for one of their AI prototypes. It could be their drone delivery system, robot pickup service, or self-driving tour. Getting straight to the point they will explain their product. Using very few words and lots of visuals they will summarize how the technology works and why it improves the lives of users. Who will invest in their invention?

*Extension Activities:*

Be a Responsible Digital Citizen, Learn About Drones and AI, Upload a Sprite, The Road to Driverless Vehicles, Organize Code Area, Print Handouts

*Technology Skills:* artificial intelligence, programming, presentation

*Technology Integration:* Computer Science, Science

*Software Applications:* Scratch | PowerPoint or Slides

## TechnoBudget

In this project, students develop financial literacy using a problem-solving model. The fun begins with a windfall and shopping spree. Students create a budget and spending plan. They use a spreadsheet to organize, calculate, and graph data. A report is written to justify financial choices and share insights about money management. Challenging enrichment activities extend learning. Students can comparison shop, use functions to analyze data, filter and sort, calculate with if-then formulas, manipulate debt repayment, build consumer awareness, and draw money idioms.

The technology project contains the following assignments:

- Assignment 1 Money Management and You
  Realize the importance of budgeting. Rate money management style.
- Assignment 2 An Unexpected Windfall
  Invent a practical reason for a financial windfall. Establish budget categories.
- Assignment 3 Discover Spreadsheets
  Work with columns, rows, and cells to arrange data in a worksheet.
- Assignment 4 Calculate Your Budget
  Divide a budget into categories. Compute totals using AutoSum.
- Assignment 5 Create a Pie Graph and Edit the Budget
  Analyze the budget using a chart. Allocate funds to meet criteria set for each category.
- Assignment 6 Create a Spending Plan Worksheet
  Build a spending plan table that calculates taxes, track totals, and uses conditional formatting.
- Assignment 7 Plan a Shopping Spree
  Determine items to purchase by visiting online stores. Record information in the spending plan.
- Assignment 8 Use a Bar Graph to Summarize Plan
  Create a graph. Modify the labels, layout, style, and legend. Scrutinize the distribution of funds.
- Assignment 9 Spreadsheet Checklist
  Verify the content of the budget, spending plan, and chart sheets. Print the workbook.
- Assignment 10 Justify Financial Choices in a Report
  Prepare a report that explains the budget and spending plan. Support reasoning with graphs.

*Extension Activities*:
Compare Purchasing Options, Use Functions to Analyze Spending Plan, Filter and Sort Data, Category Comparison Table and Graph, Understand Credit and Debt, Build Consumer Awareness, Have Fun with Money Idioms

*Technology Skills*: Spreadsheets, Word Processing, Graphics

*Technology Integration*: Mathematics, Language Arts, Business Studies

*Software Applications*: Excel, Paint, Word | or Excel Online, Word Online | Sheets, Drawings, Docs

## TechnoCode

In this project, students become coders that design a fun Activity Studio for kids using Scratch. Through discovery and exploration, they learn how to create a series of hands-on activities that children will enjoy playing. The young programmers apply computational thinking to build algorithms that sequence commands, events, loops, and conditions. They learn how to construct scripts to develop animated scenes, mazes, interactive stories, and games. Additional challenges extend coding skills to create artwork, compose music, produce a diorama, and more!

The technology project has 32 assignments that are divided into 6 Sessions:

- Session 1 Become a Programmer
  In this session, students are introduced to programming. They design animated scenes using Scratch. To start, they consider the importance of technology in daily life. Afterwards, students study the Scratch interface to label the parts. Once familiar with the environment, they discover how to stack blocks of code together to form a script that makes a character talk. Once they have mastered some of the basics, they explore the Scratch libraries to make a scene of two friends having fun.
- Session 2 Build an Aquarium
  In this session, students create their first project for the Activity Studio. It is an animated aquarium. To start, they explore Scratch Motion blocks to discover how they can be used to make sprites move across the stage. Next, students use forever and if then blocks to control the fish swimming. Afterwards, they learn how to use the Paint Editor to design a fish tank that has a custom backdrop. To practice coding skills, a list of challenges provides a creative spark. Upon completion, the project is prepared for viewers. Students are then given the option to share the file with the Scratch community and classmates.
- Session 3 Design a Maze
  In this session, students create their second project for the Activity Studio. It is a maze game. This activity provides an opportunity for students to practice coding skills from Session 2 to solidify their learning. To start, they complete a planning sheet to organize their ideas. Next, they use Scratch to create a puzzle that has players help a character find a way to the end of a path using arrow keys. To make the project unique, a list of challenges helps to make a one-of-a-kind maze. Upon completion, the game is prepared for players.
- Session 4 Broadcast a Story
  In this session, students create their third project for the Activity Studio. It is an animated story about a magical place. To start, they explore the Looks blocks to discover how they change the appearance of the main character and setting. Next, they enhance storytelling by triggering actions to occur when there is a switch in the backdrop. Afterwards, they direct the timing of events by sending messages to sprites using the Broadcast blocks. To practice coding skills, a list of challenges provides a creative spark.
- Session 5 Engineer a Game
  In this session, students create their final project for the Activity Studio. They apply their coding skills to develop a game. To start, they use planning sheets to determine the objective, scoring system, timing, and coding structure. Next, they discuss their design with a partner to assess if it is suitable for young children. Afterwards, students follow instructions to build and test the code. Challenges are included to foster originality. Upon completion, the project is prepared for players.
- Session 6 Curate an Activity Studio
  In this session, students build an Activity Studio for kids. It will have a collection of Scratch projects including an animated scene, maze, story, and game. To gain player feedback a link to the studio will be shared. Based on observation and questioning, students make recommendations for improving their Activity Studio.

*Extension Activities*:
Edit Your Scratch Public Profile, Draw Artwork with the Pen, Invent an Instrument, Record a Sound Clip, Organize Scripts with Broadcast, Chat with a Sprite, Remix a Scratch Project

*Technology Skills*: programming

*Technology Integration*: Computer Science, Mathematics, Language Arts, Science, Social Studies

*Software Applications*: Scratch

## TechnoDebate

In this project, students collaborate with a partner to create an animated debate. Using clip art characters and callout bubbles, each side states their resolution, presents a constructive speech, delivers a counter argument in a rebuttal, and summarizes their position. Cross-examination is done at the end of the debate by audience members using the commenting feature. Extension activities are included for participants to cross-examine opponents and for a judge to select a winner.

The technology project contains the following assignments:

- Assignment 1 What is a Debate?
  Rate your ability to persuade others. Evaluate the effectiveness of arguments in sample debates.
- Assignment 2 Brainstorm a Topic for your Debate
  Partner up. Refer to a list of controversial issues. Negotiate to select a topic and position.
- Assignment 3 Plan Arguments
  Apply research skills to compile compelling evidence that supports a viewpoint.
- Assignment 4 Invite a Partner to Debate
  Share a file. Collaborate to create a title slide together.
- Assignment 5 Take a Stand
  State resolution. Clearly outline a position using a clip art character and callout on a slide.
- Assignment 6 Present a Persuasive Argument
  Prepare a constructive speech. Design slides that present three reasons an opinion is correct.
- Assignment 7 Prepare a Rebuttal
  Review opponent's argument. Refute their weakest claim in a counterargument.
- Assignment 8 Summarize Ideas
  Restate your arguments to convince an audience to agree with a viewpoint.
- Assignment 9 Design an Animated Conversation
  Animate callout bubbles to produce a dynamic conversation. Apply transitions to divide debate.
- Assignment 10 Debate Checklist
  Inspect the debate to confirm it is complete. Revise the structure, content, or design.
- Assignment 11 Invite Audience Participation
  Host a public debate. Allow viewers to ask questions about each viewpoint using Comments.
- Assignment 12 Respond to Audience Questions
  Defend a position by replying to viewer questions in a cross-examination.

*Extension Activities*:
Debate Topics, Cite the Source or Research in Google Docs, Insert a Character Workshop, Cross Examine your Opponent, Judge Debate

*Technology Skills*: Presentation, Word Processing
*Technology Integration*: History, Language Arts, Science, Social Studies
*Software Applications*: PowerPoint Online, Word Online | Slides, Docs

## TechnoEarth

In this project, students become environmental stewards. They design an interactive infographic that informs the public about an important issue. The web-based publication will outline the cause, harmful effects, and solutions. It will also include a rotating slide deck that summarizes the stakeholders and highlights interesting facts. To engage viewers, a thematic map will pinpoint where the problem is happening. Upon completion, students will inspire others to get involved by sharing their findings at an Earth Keeper's Conference.

The technology project has 20 assignments that are divided into 6 Sessions:

- Session 1 Become an Earth Keeper
  In this session, students become environmental stewards. They prepare to create an infographic that informs the public about an important issue. To start, they study example publications to gain an understanding of the content and design elements. Next, they research a topic including cause, effects, interesting facts, location, stakeholders, and solutions. A reference list tracks sources of information. By the end of the session, students complete a checklist to verify they are ready to design their infographic.
- Session 2 Warn Others of the Issue
  In this session, students begin to build their infographic using Google Sites. They introduce the environmental issue, describe the cause, and illustrate harmful effects. An emphasis is placed upon conveying information concisely using catchy headings and simple clip art. Instructions direct students to chunk their data into sections using color and dividers.
- Session 3 Highlight the Facts
  In this session, students create a rotating slide deck using Google Slides. It will emphasize interesting facts and outline stakeholders. To start, students use a big number to highlight the scale of the problem. Next, they point out an important detail using colorful word art. Afterwards, they construct a diagram that summarizes who has a stake. Upon completion, the slide deck is inserted into the infographic and set to automatically play. Instantly the viewer should be able to grasp the scope of the environmental issue.
- Session 4 Pinpoint the Problem
  In this session, students produce a thematic map using Google My Maps. It will pinpoint locations where the environmental issue is happening. The places could be worst offenders, best stewards, disaster sites, at-risk regions, successful conservation projects, or legally protected areas. Each marker will display an interesting fact and a photo. The map will be inserted into the infographic allowing viewers to explore and learn about the topic.
- Session 5 Tackle the Challenge
  In this session, students illustrate solutions to the environmental issues by designing their own icons using Google Drawings. Each image will be a simple representation made by combining shapes, word art, and cropped images. The original artwork will be inserted into the infographic with an explanation. A link to an advocacy group will invite viewers to get involved.
- Session 6 Let's Get Involved!
  In this session, students raise awareness about an environmental issue. They publish their infographic using Google Sites. Afterwards, they share their infographic at an Earth Keeper's Conference.

*Extension Activities*:
Recognize Bias, Assess Trustworthiness of a Site, Photo Gallery of Harmful Effects, Inform with a Pictograph, Keep Score, Make a Collapsible Source List

*Technology Skills*: Publishing, Digital Citizenship, Graphics, Internet, Presentation, Web Design, Word Processing
*Technology Integration*: Geography, Language Arts, Science, Social Studies
*Software Applications*: Docs, Sites, Slides, My Maps, Drawings, Sheets

## TechnoEnvironment

In this project, students become Earth Keepers. They raise environmental awareness about a current issue. To start, they use the Internet to research facts and organize the information under headings in a Microsoft Word document. Next, they learn how to use the tools in Microsoft Publisher to create a postcard and a poster as a call to action. To inform people further about the importance of this issue, students use Microsoft Publisher to produce a pamphlet that describes the harmful effects and offers solutions. Optional activities have students prepare for an Environmental Conference by creating a calendar, banners, and invitation to the event.

The technology project has 14 assignments that are divided into 6 Sessions:

- Session 1 Research the Topic
  In this session, students research an environmental issue. To start, they learn about the importance of stewardship. Next, they select a topic and then design an outline in Microsoft Word with headings to organize facts. The Internet is used to locate information about the issue, including effects on the environment and solutions to the problem. Students record the source and gather pictures related to the topic. This research will provide the content for the publications they create in the following sessions.
- Session 2 Postcards from the Edge
  In this session, send a postcard asking a friend to become involved in protecting Earth. To prepare for this task, they are introduced to MS Publisher. Once familiar with the parts of the window, a template is opened in the program. Students learn how to format a shape to create a background for the front of the postcard. Next, they include a catchy title using a text box. To attract attention to the issue, a picture illustrating damage to the environment is inserted with a caption. A message is then written on the back of the postcard.
- Session 3 Help Wanted!
  In this session, students create a Help Wanted poster to explain what people can do to protect Earth. To start, students insert a saved picture that illustrates the harmful effects of an environmental issue and apply their formatting skills. Next, they add an image from an online source and arrange it by adjusting the object order, alignment, grouping, and orientation. Afterwards, they use a Page Part to describe the problem and a solution that is achievable by students. A border is then inserted and an advertisement building block used to request help. To complete the poster, a WordArt title is used to attract attention to the publication.
- Session 4 Educate the Public
  In this session, students begin to create a pamphlet to educate the public about an environmental issue. Using a template, students apply design elements including frames to accent each panel, a Page Part to create an attractive front cover, and text boxes to hold information. Once the layout of the pamphlet has been established, students apply their knowledge to produce the first panel in the publication.
- Session 5 Solve the Problem
  In this session, students continue working on the pamphlet by proposing solutions to the environmental issue. The three panels of the second page of the pamphlet are completed using bulleted text, pictures, captions, and predesigned attention getters. On the third panel, students learn to add and format a table to compare the advantages and disadvantages of a solution to the environmental problem.
- Session 6 Take an Environmental Quiz
  In this session, students complete the pamphlet. To inspire active involvement, the back of the pamphlet has a quiz. As viewers read the questions and answer them, they will remember information about the environmental issue and possibly even read the facts over again. The pamphlet will have achieved its aim of informing others and gathering support to face a very important challenge for Earth.

*Extension Activities*:
Environmental Map, Save the Earth Calendar, Create a Banner, Invite Guests to a "TED" Talk, Plan an Environmental Conference or "TED" Talk

*Technology Skills*: Publishing, Graphics, Internet, Word Processing

*Technology Integration*: Geography, Language Arts, Science, Social Studies, Visual Arts

*Software Applications*: Publisher

## TechnoHTML5


In this project, students become web designers using HTML and CSS. Students are introduced to the history of the Internet and HTML language. Next, they manipulate source code to discover the function of common tags and CSS attributes. This knowledge is applied to construct a web page. Throughout the design process instructions explain how to style text, graphics, and hyperlinks to produce an informative web page. For those in need of a challenge, extension activities encourage students to create a list, apply a picture background, customize hyperlinks, employ CSS classes, insert animations, and build tables. Upon completion, the files are uploaded to the Internet.

The technology project has 18 assignments that are divided into 6 Sessions:

- Session 1 Seeking the Source
  In this session, students gain an understanding of the Internet and HTML. To begin they learn some basic terminology and consider the importance of the Internet in their lives. Afterwards, they read about key events in the development of this amazing technology. Once familiar with the history, students learn about the WWW and use a web browser to view web pages. They are introduced to HTML and its importance in the world today. Afterwards, they view the source code for web pages and decode the meaning. Upon completion of this session, students should have a basic understanding of Internet terminology and HTML.
- Session 2 Cracking the Code
  In this session, students learn about the function of HTML tags and CSS attributes. To start, they open a web page and edit coding for the title, headings, paragraph, line break, horizontal rule, image, and hyperlink. Once familiar with basic elements, they explore how to format a web page. They edit CSS to alter color, width, font, font size, line height, alignment, and padding. Once students understand the structure of an HTML document, they plan the design of their web page. They search the Internet for information, pictures, and hyperlinks. This provides them with the material they need to start building their web page in the next session.
- Session 3 Begin Web Page Building
  In this session, students begin to construct their web page. To start, they form the structure of the HTML document. They then add the title, heading, several paragraphs, and a horizontal rule. Upon completion the web page is saved as index.html. Next, students format each element using CSS. They set the color, width, position, font family, font size, text alignment, padding, and line height. Tips are offered to help students improve the appearance of their web page.
- Session 4 Add Images and Hyperlinks
  In this session, students continue to design their web page. To start, they study their saved pictures to make sure they are appropriately named and resized. Once their images are prepared, students use HTML to insert the pictures and format the style using CSS. Next, students create hyperlinks to three websites. Additional styling challenges are included in the extension activities.
- Session 5 Meta Tags
  Students are introduced to meta tags. They explore how search engines and social media services use this information. Description and keyword meta tags are inserted into their HTML document. Next, students examine their web page using a checklist to highlight areas that require improvement. If time permits, additional challenges are in the extension activities including how to insert animations and tables.
- Session 6 Upload the Web Page
  In this session, students register for a free website account with a web hosting service. Then they upload the web page that they created and the associated image files. Finally, the class has an HTML Developers Conference in which they view each other's web pages and write compliments about the sites.

*Extension Activities*:
Analyzing Websites, Format Lists, Add a Background Image, Format the Hyperlink Style, Create a Class, Add Animated Text and Images, Create a Table, Submit Your Site to a Search Engine

*Technology Skills*: Programming, Web Design

*Technology Integration*: Computer Science

*Software Applications*: Text Editor

## TechnoMap

In this project, students create an interactive map that demonstrates how human and physical geography intersect. The topic can be global, national, provincial, state, regional, or local. The map will have markers that, when clicked, provide facts about a location. This is a great way to explore and learn about an area or issue. To start, students study maps. Next, using an inquiry-based approach they select a question to investigate. Students are guided through creating slides and adjusting the flow of information to make a clickable map. Upon completion, their interactive map is shared with others.

The technology project contains the following assignments:

- Assignment 1 What is an Interactive Map?
  Examine interactive maps. Contemplate how they connect geography to human activity.
- Assignment 2 Brainstorm a Topic for Your Interactive Map
  Study research suggestions. Specify a question for investigation using an inquiry-based approach.
- Assignment 3 Organize Research Findings
  Investigate the topic. Document the information and location of facts using an organizer.
- Assignment 4 Create the Map Slide
  Design a map slide with a WordArt title and a suitable map of the area.
- Assignment 5 Create Information Slides
  Produce information slides that contain interesting facts about a location.
- Assignment 6 Connect Slides in Interactive Map*
  Connect markers on the map to information slides. Control slide advancement.
- Assignment 7 Interactive Map Checklist
  Assess the navigation, content, and design of the interactive map using a checklist. Solve any issues.
- Assignment 8 Share the Map with Others
  Display the interactive map as a digital trip, map exhibit, or string map.

*Extension Activities*:
Research Using Google Docs*, Screen Capture a Road Map, Working with Pictures, Organize Facts using a Table, Add Hotspots, Add a Video*, Insert a Link*

*Technology Skills*: Presentation, Word Processing
*Technology Integration*: Geography, History, Social Studies
*Software Applications*: PowerPoint, Word | PowerPoint Online, Word Online | Slides, Docs

**Note:* Select extension activities are not available for all product versions. Assignment 6 differs between versions. To connect slides, hyperlinks are used by Google users and the Zoom feature is used by Microsoft PowerPoint users.

## TechnoNewsletter

In this project, students create a fan club newsletter. They design a professional-looking publication. Students learn valuable word processing skills such as formatting text, arranging objects, adjusting page layout, working with tables, referencing information sources, and inserting headers or footers. Challenging enrichment activities support learning with optional assignments that include how to how to create a collage, co-author an article, or engage in an online discussion.

The technology project contains the following assignments:

- Assignment 1 FANtastic Newsletter
  Study sample newsletters to learn about the content. Brainstorm topics for a fan club.
- Assignment 2 Start a Fan Club
  Propose ideas for a fan club newsletter. Formulate a plan using guiding questions.
- Assignment 3 Create the Front Cover Phase 1
  Begin a newsletter cover. Format the title and arrange article names in a bulleted list.
- Assignment 4 Create the Front Cover Phase 2
  Enhance the cover by inserting a picture and hyperlink. Lay out the content to fit on one page.
- Assignment 5 Top 5 List
  Share insights in an article that will grab fan's attention. Arrange text using a numbered list.
- Assignment 6 Design a Word Search
  Construct a word search of topic-related terminology using a table to position content.
- Assignment 7 Make a Word Search Answer Key
  Reconstruct content by copying a table and filling cells to form a word search answer key.
- Assignment 8 Organize Ideas for Opinion Article
  Defend a viewpoint. Establish arguments with evidence for an article that will sway opinion.
- Assignment 9 Share Your Opinion
  Express a point of view using supporting quotes. Reference quotes using footnotes.
- Assignment 10 Complete the Newsletter
  Prepare the newsletter for publication by inserting page numbers, headers, and footers.
- Assignment 11 Share Newsletter with Readers
  Publish the newsletter in print or digital form. Distribute to fans.

*Extension Activities*:
How to Save Pictures*, Explore to Insert Quotes*, Create a Collage, Keep Writing, Guest Writer*, Digital Citizenship and Commenting

*Technology Skills*: Word Processing
*Technology Integration*: Language Arts, History, Social Studies, Science
*Software Applications*: Word | Word Online | Docs

**Note*: Select extension activities are not available for all product versions.

## TechnoPython

In this project, students are introduced to Python. They complete coding missions to develop the characteristics most valued in a programmer. To start, they ignite their curiosity by exploring scripts to discover how they are put together. Next, they create games including Pet Monster Rescue, Guess It, and Adventure Quest. These foster logical thinking, persistence, and creativity, and are ideal for beginners. Upon completion, students share their favorite program in a coding presentation. Have your students develop original code using loops, functions, and conditionals.

The technology project has 24 assignments that are divided into 6 Sessions:

- Session 1 Into the Coding Jungle
  In this session, students explore the Coding Jungle. The goal of this mission is to learn about Python. To start, the explorers are introduced to terminology by experimenting with code. Once familiar with the role of a programmer, they play a Python Hunt game and then edit the program to discover how it works. Afterwards, they break code in the Catch the Bugs game to develop essential debugging skills. Successful completion of the four-part mission requires curiosity, which is a highly valued trait in a programmer.
- Session 2 Pet Monster Rescue
  In this session, students create a program for the Pet Monster Rescue, which is a group that finds loving homes for monsters. To prepare for the programming mission, students learn about strings, integers, and variables. They apply this knowledge to personalize the adoption process. To pair a pet owner to their monster, the programmers write code that ask questions. The answers are used to match people to their ideal pet. This is done by combining logical operators, if and else statements, and a variable that changes from True to False. Throughout the four-part mission, an emphasis is placed upon thinking logically.
- Session 3 Guess It Game
  In this session, design a guessing game in which the player must correctly pick a number before they run out of chances. Clues tell them if their answer is too high or low. This programming mission has six parts. To prepare, students first explore how to code while and for loops. Once familiar with how to repeat a set of instructions, they start to build Guess It. To guide development, the Python programmers sequence steps into algorithms. These flowcharts provide a framework for constructing each part of the program. Fun challenges encourage students to build a unique game. Interwoven throughout all tasks is a focus upon being methodical. This skill helps programmers test different cases to solve problems within the code.
- Session 4 Adventure Quest Part 1
  In this session, students develop a text-based adventure game. It is a quest that has players overcome challenges to earn rewards. To prepare for this programming mission, students learn techniques to standardize data entry. Next, they apply these skills to build the first part of their game. It will allow players to pick a direction to explore. It will also include a challenge whereby the player can win coins when they travel North. To complete the task, students must be persistent. What will happen in this strange land?
- Session 5 Adventure Quest Part 2
  In this session, students complete their text-based adventure game. They develop a treasure hunt that has players travel East to collect objects. They must avoid danger, or risk losing it all! To prepare for this part of the programming mission, students learn about lists. They add, remove, sort, and count items. Once this skill is mastered, they apply it to their quest. Throughout the activities, an emphasis is placed upon creativity. This trait is essential as it allows programmers to design original programs.
- Session 6 Coding Presentation
  In this session, students share their favorite Python program in a coding presentation. They demonstrate how the game works and explain the code. This provides an opportunity to develop strong communication skills, which help programmers do their job.

*Extension Activities*:
Coding Reflections, Find and Fix the Bugs, Open a Pet Monster Picture, Keep Score, Toss a Rare Coins, Game Test the User Experience, Earn a Reward, Create a Map

*Technology Skills*: programming

*Technology Integration*: Computer Science, Mathematics, Language Arts, Social Studies

*Software Applications*: IDLE Python 3

## TechnoQuestionnaire

In this project, students become researchers. They conduct a questionnaire to research an important issue. To begin, students gain an understanding about the purpose of surveys by completing a Reading Habits questionnaire. Next, they design their own School Spirit survey to learn how to use Google Forms. Once familiar with this method of data collection, they develop their own research question, select a sample, and design a questionnaire. A pre-test is used to improve the design. The questionnaire is then administered to the sample group. Once the data is collected it is analyzed. Research findings are shared with a jury of peers in an oral presentation.

The technology project contains the following assignments:

- Assignment 1 What is a Survey Questionnaire?
  Understand the purpose of a survey. Introduce terminology (e.g. population, sample, bias).
- Assignment 2 Compare a Poll and a Survey
  Participate in a Reading Habits poll and survey. Compare these two methods of gathering data.
- Assignment 3 Study Survey Results
  Analyze data from Reading Habits survey.
- Assignment 4 Create a School Spirit Survey
  Build a survey to learn how to create questions, specify properties, and invite responses.
- Assignment 5 Organize Ideas for a Survey Questionnaire
  Determine the purpose, sample, data collection method, and questions for questionnaire.
- Assignment 6 Build a Survey
  Construct a questionnaire that effectively sequences the questions and controls data entry.
- Assignment 7 Conduct a Pre-Test
  Consult a peer about the design and content of the questionnaire. Implement recommendations.
- Assignment 8 Collect Survey Results
  Administer the questionnaire to a sample group of respondents.
- Assignment 9 View Survey Results
  Summarize the results in a report. Manipulate the data using a spreadsheet.
- Assignment 10 Analyze Survey Results
  Interpret the findings. Draw conclusions about the application of results. Critique research design.
- Assignment 11 Present Findings to a Jury of your Peers
  Convey results and their importance to an audience. Provide evidence of conclusions.

*Extension Activities*:
What is Sample Bias? What is Question Bias? Brainstorm Survey Ideas, Compare Results with a Pivot Table or Chart

*Technology Skills*: Spreadsheet, Data Management
*Technology Integration*: Math
*Software Applications*: Google Forms, Sheets

## TechnoRestaurateur

In this project, students launch a successful restaurant venture. They apply critical and creative thinking to develop a unique business concept. To start, students conduct a survey and interpret the results to make decisions about their restaurant. Next, they create a company logo and write a professional letter to raise seed money. With the funding secured, students design a floor plan. Once the restaurant had operated for a year, financial earnings are analyzed. The business is then advertised using a newsletter to potential investors as a franchise opportunity.

The technology project contains the following assignments:

- Assignment 1 Become a Restaurateur
  Consider how technology can help launch a restaurant venture.
- Assignment 2 Learn Basic Spreadsheet Skills
  Explore spreadsheets to understand terminology and acquire basic skills.
- Assignment 3 Conduct a Survey of Food Preferences
  Investigate cuisine favorites by administering a survey to respondents.
- Assignment 4 Record Survey Results in a Spreadsheet
  Arrange survey results in a worksheet. Format the data to make it easy to read.
- Assignment 5 Graph Survey Results as a Pie Chart
  Convert survey results into a pie chart. Customize the legend, labels, and chart style.
- Assignment 6 Develop Restaurant Idea from Survey Results
  Interpret the meaning of the survey findings to develop a business concept based on evidence.
- Assignment 7 Create a Company Logo
  Draw a logo that symbolizes the company. Combine shapes and text to illustrate an original image.
- Assignment 8 Write a Professional Letter
  Request seed money for the restaurant. Convince investors that the concept will succeed.
- Assignment 9 Draft a Floor Plan
  Sketch a floor plan for the restaurant that meets the needs of staff and patrons.
- Assignment 10 Calculate Monthly Restaurant Earnings
  Total monthly profits. Analyze earnings to devise a business strategy.
- Assignment 11 Calculate Quarterly Restaurant Earnings
  Measure the financial health of the business. Calculate quarterly and average earnings.
- Assignment 12 Graph Quarterly Earnings as a Line Chart
  Plot quarterly earnings using a line graph. Predict future profits using a trend line.
- Assignment 13 Design a Business Opportunity Newsletter
  Advertise the restaurant as an investment opportunity. Inform entrepreneurs about the benefits.

*Extension Activities*:
Apply Advanced Drawing Techniques, Use Functions to Analyze Earnings, Share your Files with Investors*, Advertise a Deal, Create an Opinion Survey

*Technology Skills*: Spreadsheet, Word Processing, Graphics, Presentation, Data Management

*Technology Integration*: Math, Language Arts, Visual Arts

*Software Applications*: Excel, PowerPoint, Word, | Excel Online, Forms for Excel, PowerPoint Online, Word Online | Sheets, Slides, Docs, Drawings, Forms

**Note*: Select extension activities are not available for all product versions.

## TechnoTravel

In this project, students become travel agents. They create a travel advertisement for a weekend getaway. To start, students use the Internet to research the destination. Afterwards, they personalize a slide master to create a unique marketing tool that persuades visitors to take the trip. The vacation is then promoted to customers in the form of a slideshow and brochure.

The technology project contains the following assignments:

- Assignment 1 About Travel and Tourism – Consider the reasons people travel and the role of tourism.
- Assignment 2 Become a Travel Agent – Invent a travel agency. Spark ideas for a weekend getaway.
- Assignment 3 Pick a Travel Destination – Decide upon a location for a trip using suggestions as a guide.
- Assignment 4 Research a Travel Destination – Investigate and organize information on a fact sheet.
- Assignment 5 Gather Images for the Travel Advertisement – *Respect copyright when saving files.*
- Assignment 6 Learn About Microsoft PowerPoint – *Explore the window, ribbon, and commands.*
- Assignment 7 Customize the Slide Master – Design a unique theme for slides in a presentation.
- Assignment 8 Test the Layout and Design of the Slide Master – *Troubleshoot and resolve design issues.*
- Assignment 9 Complete the Introduction Slide – Entice visitors with interesting facts on a slide.
- Assignment 10 Plan a Travel Itinerary – Schedule activities to form a realistic timetable.
- Assignment 11 Design a Travel Itinerary – Outline the activities using a table. Format the style.
- Assignment 12 Create an Activity Slide in Normal View – *Crop an image to decorate the slide.*
- Assignment 13 Create an Activity Slide in Outline View – *Enrich phrasing using the thesaurus*.
- Assignment 14 Complete the Itinerary Slides – Capture tourist interest by showcasing activities.
- Assignment 15 Mark a Map to Show Travel Destination – *Pinpoint a location with symbols*.
- Assignment 16 Link to Travel Guides using Hyperlinks – *Connect objects to online information*.
- Assignment 17 Edit the Travel Advertisement – *Spell check the text. Rearrange slide order*.
- Assignment 18 PowerPoint - Set Up the Advertisement in Kiosk Mode – *Add transitions. Adjust to loop.*
- Assignment 18 Slides - Host an Information Session – *Lead a Q&A session. Answer viewers' questions.*
- Assignment 19 Print the Advertisement – Advertise the trip using a flyer or a multi-page brochure.
- Assignment 20 PowerPoint - Export the Advertisement as a Video – *Promote the trip using a video clip.*
- Assignment 20 Slides - Promote the Advertisement Using a Link – *Advance slides automatically. Share.*
- Assignment 21 PowerPoint - Advertise the Weekend Getaway – *Share advertisement. Invite comments.*
- Assignment 21 Slides - Comment on Weekend Getaways – *Invite peers to view ad. Reply to comments.*

*Extension Activities*:
Create a Fancy WordArt Style*, Import a Theme to Make a Poster*, Make a Video Clip, Design an Interactive Street Map, Animate the Travel Advertisement, Calculate Travel Costs, Book Flight or Accommodations

*Technology Skills*: Presentation, Word Processing
*Technology Integration*: Social Studies, Geography, Language Arts, Travel and Tourism
*Software Applications*: PowerPoint, Word, Excel | Slides, Docs, Sheets

**Note*: Select extension activities are not available for all product versions.

# Helpful Resources

Refer to these helpful resources to learn more about how to use TechnoKids technology projects in your classroom.

### FAQ

https://www.technokids.com/store/computer-curriculum.aspx

### Getting Started

https://www.technokids.com/support/getting-started.aspx

### Google Classroom

https://www.technokids.com/support/google-classroom.aspx

### Support Request

Complete the support form request:
https://www.technokids.com/support/support-form.aspx

YouTube

Subscribe to our YouTube channel to receive alerts of new activity.

# Contact Information

TechnoKids Inc. offers free curriculum support.
Contact our support staff by email at support@technokids.com or by telephone 1-800-221-7921.

We want to be your partner in computer education. If you have any comments or questions regarding our instructional materials, please contact our Head Office.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