

An aerial photograph of a city skyline at sunset. The sky is a mix of blue and orange, with scattered clouds. The city features several tall skyscrapers, some of which are illuminated. In the foreground, there is a large body of water reflecting the sky and the buildings. The surrounding area includes green trees, a parking lot, and some lower-rise buildings.

# Understanding the Updates in the Revised Technology Applications TEKS

(Adopted 2022)

- The current technology applications TEKS were implemented in 2012-2013.
- The revised technology applications TEKS are scheduled be implemented beginning the 2024-2025 school year.
- Implementation of the new TEKS is dependent upon Commissioner of Education determination. [19 Texas Administrative Code \(TAC\) Chapter 126](#)



# Overarching Changes in the 2022 TEKS - 1



- TEKS for each grade level, no longer in grade bands
- Use of strands and substrands as organizing principles
- Reorganization of content across the strands
  - Computational thinking (new)
  - Creativity and innovation
  - Data literacy, management, and representation (new)
  - Digital citizenship
  - Practical technology concepts

# Overarching Changes in the 2022 TEKS - 2



- New TEKS or revised TEKS for new strands and grade level structure
- Integration of communications and collaboration throughout the TEKS
- Strands → connect to everyday life and to solve problems
- Progression from language students are familiar with to technology terminology
- The use of “with assistance”
- The use of “with or without technology”
- Terminology with simpler wording in ()
- Broad descriptions of technology to allow for emerging technology

## • Kindergarten

### ■ Computational thinking

- problem or task identification
- simple pattern recognition
- basic algorithms (step-by-step)
- decomposition into smaller pieces
- predictions
- create code sequences



### ■ Creativity and innovation

- personal skills needed for design processes
- application of a design process in problem-solving

### ■ Data literacy, management, and representation

- focus on what data is
- concept of searching and retrieving information

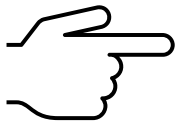
## • Kindergarten

### ■ Digital citizenship

- behaviors
- acceptable use
- content ownership
- safety

### ■ Practical technology concepts

- usage
- identification
- keyboarding
- ergonomics



“with assistance” and “with or without technology”

## • 1<sup>st</sup> Grade

### ■ Computational Thinking

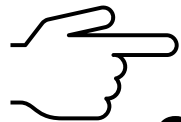
- problem identification



- decomposition (sequences),

- use of everyday tasks for pattern recognition

- create basic algorithms,



- create code sequences to solve a problem

### ■ Creativity and innovation

- design process in problem solving
- technology impacts on communities

### ■ Data literacy, management, and representation

- use of keywords/digital sources in searches
- data collection

## • 1<sup>st</sup> Grade

### ■ Digital citizenship

- develops behaviors
- content ownership, and safety from K
- cyberbullying
- acceptable use
- account safety

### ■ Practical technology concepts

- builds on usage
- identification
- builds on keyboarding and ergonomics
- introduces the creation of an original product and revisions

### ■ “with assistance” and “with or without technology”



## • 2<sup>nd</sup> Grade

### ■ Computational thinking

- problem identification
- decomposition multiple solutions into sequential steps
- complex patterns
- creating and troubleshooting basic algorithms with if-then statements
- code variables and loops

### ■ Creativity and innovation

- application of a design process to create solutions to problems

## • 2<sup>nd</sup> Grade

### ■ **Data literacy, management, and representation**

- non-numerical data collection
- use of keywords/digital sources in searches independently
- use tools to create and communicate data visualizations – such as bar graphs

### ■ **Digital citizenship**

- develops behaviors, acceptable use, content ownership, and safety
- introduces private and public information

### ■ **Practical technology concepts**

- builds on usage, identification, keyboarding, and ergonomics
- introduces sharing content

### ■ “with assistance” and “with or without technology”

## • 3<sup>rd</sup> Grade

### ■ Computational thinking

- adds story problems
- debugging
- variables to store data
- decomposition into subproblems
- algorithms (procedures)
- sequences, loops and conditionals

### ■ Creativity and innovation

- more personal skills development and apply design process – such as feedback
- adds definition of emerging technology

### ■ Data literacy, management, and representation

- shift to numerical data collection
- use of search strategies
- use of digital tools to communicate and publish results, intent to inform, to specified audience

## • 3<sup>rd</sup> Grade

### ■ Digital citizenship

- digital footprint, etiquette, and collaboration
- copyright law, appropriate/inappropriate use, and citations
- builds on account safety, identify protection, online dangers
- cyberbullying and responses to it

### ■ Practical technology concepts

- application types and perform functions within applications
- terminology related to OS and networks
- saving and naming files
- keyboards and input devices adds device shortcuts
- identify and solve technical issues

## • 4<sup>th</sup> Grade

### ■ **Computational thinking**

- decomposition into subproblems and solutions
- adds predictions from pattern
- variables to modify data
- debug algorithms
- sequences, loops & conditionals w. purpose

### ■ **Creativity and innovation**

- design process to improve processes/products

### ■ **Data literacy, management, and representation**

- numerical and non-numerical data
- transform and make inferences about data to answer a question
- uses digital tools to communicate inquiry results – to inform -- intended audience

## • 4<sup>th</sup> Grade

### ■ Digital citizenship

- creator rights and how copyright law applies to creative work
- citations for digital media content
- types of data collection tools in digital world
- cyberbullying, responses to it – advocating for self and others

### ■ Practical technology concepts

- application selection for assigned tasks
- more application functions and terminology
- saving and naming files in context of strategies and folder structures
- use of strategies to solve technical issues

- **Computational thinking** • **5<sup>th</sup> Grade**
  - decomposition with graphical organizers
  - document problems, solutions, and coded resolution timeline
  - compare and select appropriate algorithms
  - design process to create block-based programs
  - identify how code can be reused
  
- **Creativity and innovation**
  - design process with components to generate multiple solutions
  - predict how emerging technologies may impact different communities
  
- **Data literacy, management, and representation**
  - quantitative and qualitative data; keywords, Boolean operations, and limiters
  - analyze, transform and make inferences about data to answer questions
  - communicate and display data w. visualization - to inform – intended audience

## • 5<sup>th</sup> Grade

### ■ Digital citizenship

- digital imprints – such as online activities, games
- digital etiquette for different audiences
- copyright law purposes and consequences
- cybersecurity strategies for safety/security
- interaction escalations and ways to stand up to cyberbullying

### ■ Practical technology concepts

- file types
- more application functions and terminology
- describe and evaluate multiple systems
- file organization
- continued keyboarding/input device fluency
- use help to research application features/issue resolution



## • 6<sup>th</sup> Grade

### ■ Computational thinking

- decomposition with visual representations; analyze patterns in visual representations
- abstraction and generalized/specific information
- plan documentation with visual representations
- debugging techniques and iterations

### ■ Creativity and innovation

- continues build on design process
- connects design process to industry
- technology throughout history – impact areas of study
- global trends impact on technology

## • 6<sup>th</sup> Grade

### ■ **Data literacy, management, and representation**

- data representation as Boolean expression
- use tools to transform data to discuss trends and make inferences
- communicate and display data -- to inform – intended audience

### ■ **Digital citizenship**

- impact of digital footprints
- create communications and presentations using appropriate etiquette
- intellectual property laws – protection and consequences
- create citations and citing digital sources
- protection from cybersecurity attacks
- various methods of cyberbullying

## • 6<sup>th</sup> Grade

### ■ Practical technology concepts

- create and design files in various formats
- application of terminology
- more advanced file management strategies
- select and use tools for a specific task
- local and remote storage
- use productivity tools to create digital artifacts
- continued keyboarding, words per minute, and troubleshooting

## • 7<sup>th</sup> Grade

### ■ Computational thinking

- decomposition with flowcharts; analyze patterns in flowcharts
- abstraction and how algorithms can be generalized
- plan documentation with flowcharts
- application of various debugging techniques and benefits of iterations
- more work with variables and data types
- nested loops

### ■ Creativity and innovation

- continues build on design process – prototypes or models/trial and error
- connects design process to industry
- technology throughout history – impact areas of study
- global trends impact on technology

## • 7<sup>th</sup> Grade

### ■ **Data literacy, management, and representation**

- data representation in binary number systems
- use tools to transform data to analyze trends and make inferences and predictions
- communicate and display data -- to inform or persuade – intended audience

### ■ **Digital citizenship**

- actions and effects on digital footprints
- create and revise communications using feedback and using appropriate etiquette
- intellectual property and associated terminology
- information exaggeration and misrepresentation
- real world cybersecurity issues
- negative impacts of cyberbullying

## • 7<sup>th</sup> Grade

### ■ Practical technology concepts

- create, share, and communicate digital artifacts
- appropriate use of terminology
- effective file management strategies
- select and use tools for a specific task
- local and remote storage to store or share data
- use productivity tools to create digital artifacts
- continued keyboarding, words per minute, and troubleshooting
- test solutions for technical issues

## • 8<sup>th</sup> Grade

### ■ Computational thinking

- decomposition using pseudocode; analyze patterns in pseudocode
- abstraction by developing generalized algorithms
- plan using pseudocode
- improvement of algorithms and modify previously written code
- named variables with multiple data types and perform operations

### ■ Creativity and innovation

- continues build on design process – innovation, more process elements
- continues connections to industry
- continues technology throughout history – impact areas of study
- continues global trends impact on technology – evaluate and predict

## • 8<sup>th</sup> Grade

### ■ **Data literacy, management, and representation**

- compare and contrast multiple data types
- apply search strategies for a specified outcome
- transform data, analyze trends, infer, predict, develop steps to create process/product
- communicate and publish data -- to persuade – intended audience

### ■ **Digital citizenship**

- manage digital footprints and impacts on the future
- create and publish communications for global audience using appropriate etiquette
- evaluate bias
- analyze real world cybersecurity issues and propose ways to prevent harm
- evaluate scenarios/case studies to identify warning signs of a cyberbullying victim and predict outcomes for the victim and the bully



## • 8<sup>th</sup> Grade

### ■ Practical technology concepts

- combine file formats for a project/audience
- share and seek feedback on files
- appropriate use of terminology in various settings
- effective file management strategies
- select and use tools for a specific task – transfer data
- select appropriate type of storage
- use productivity tools to create digital artifacts
- continued keyboarding, improved speed, and use of tools to create artifacts with increasing complexity