
Montana 7 Technology / Computer Science

FREE PREVIEW

Full-Year Teacher Planner, Blank Editable Planner & School-Submission Binder

This preview shows the real structure and a genuine sample of the completed planner. The full product contains 9 units, 36 weekly plans and 180 daily plans, plus blank editable versions of every form.

State	Montana
Grade	7 (Middle)
Subject	Technology / Computer Science
Course category	Technology
Standards family	Science
Framework	Montana Content Standards for Computer Science (2021)
Issuing agency	Montana Office of Public Instruction
Scope	36 instructional weeks · 180 instructional days · 9 units

This is a statewide standards index, not a local course catalog. Course names, grade placement, electives, and graduation sequences vary by district.

What you get

Folder	Contents
01 START HERE	Read-me, contents, printing and digital instructions, standards verification guide, this preview
02 FILLED FULL YEAR	Completed planner in colour and ink-friendly PDF, plus editable DOCX
03 BLANK EDITABLE	Blank planner in colour, ink-friendly and fillable PDF, plus editable DOCX
04 ASSESSMENTS AND DATA	Baseline observation, quarterly rubrics, anecdotal forms, portfolio checklist
05 SCHOOL SUBMISSION	Submission covers, alignment summary, evidence checklist, observation, reflection, signature page
06 LICENSE AND CREDITS	Terms of use, credits and licences, copyright notice

The pages that follow are reproduced **exactly** as they appear in the full completed planner.

Week 9 — Common Methods of Securing Data

Unit 3: Safety, Security and Ethics · Month 3 · Quarter 1 · Semester 1 · Instructional Days 41–45

Essential question	What actually keeps data safe?
Standards	Common Methods of Securing Data -> CS.NI.6-8.1 Montana Computer Science K-12 / networks and the internet — explain how physical and digital security measures protect electronic information
Learning target	"I can identify common methods of securing data."
Local dates	_____ (enter your school dates)

Measurable objectives

- Students will identify common methods of securing data.

Success criteria (student-friendly)

- "I identify methods of more than one kind."
- "I explain what each protects against."
- "I explain a limit of each."

Academic vocabulary

encryption, authentication, backup, access control, threat

Materials and technology

- Paper and pencils
- Whiteboard
- Notebooks
- Published information the teacher selects
- Devices optional

Differentiation and supports

Support area	This week's plan
Special education / IEP	Reduce group size; pair visual cue cards with all verbal directions; allow gesture or picture response in place of speech; pre-teach the week's target in a 1:1 warm-up.
Section 504	Provide the child's documented accommodations throughout; permit movement breaks and alternative seating at any point in the sequence.
Multilingual learners	Introduce each vocabulary word with an object or image; accept home-language responses; send the vocabulary list home where a translation is available; pair with a peer who shares the home language.
Advanced / extension	Ask the learner to teach the skill to a peer, extend the task, or record a demonstration for the class reference wall.

Support area	This week's plan
Intervention / reteach	Reteach the target in a short small group using the same materials; split the day's check for understanding into two smaller steps.
Enrichment	Extend into an open-ended centre or project connected to the essential question.

Assessment and evidence

Methods identified with what each protects against and its limits.

Family communication

Ask your child what encryption does.

Day 41 — Nothing Is Attacked in This Unit

Week 9, Day 1 • Unit 3 • Standards: CS.NI.6-8.1

Focus	The rule, first.
Learning target	"I can identify common methods of securing data."
Vocabulary in use	encryption, authentication, backup
Local date	_____

Learning sequence

TEACHER NOTE: Unit 3 covers securing data, social engineering and cybersecurity. NOTHING IN THIS COURSE PROBES, TESTS, ACCESSES OR ATTEMPTS TO CIRCUMVENT ANY SYSTEM - not a classmate's account, not a website, and least of all the school's network. Everything is taught on paper, on diagrams and on published information. Connect: Unit 2. Teach: the rule and why it exists - the same knowledge defends or attacks, and this course teaches only the defending half. Try: shared restating. Apply: pupils record the rule. Reflect: it governs Weeks 9-12 and Weeks 25-27.

Check for understanding

Student states what this unit will not do.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 42 — Locking It: Encryption

Week 9, Day 2 · Unit 3 · Standards: CS.NI.6-8.1

Focus	The first method.
Learning target	"I can identify common methods of securing data."
Vocabulary in use	encryption, authentication, backup
Local date	_____

Learning sequence

Connect: the rule. Teach: encryption as making data unreadable without a key, what it protects against (someone reading data they obtained) and what it does not (someone getting the key, or deleting the data). Try: shared paper cipher to see the principle. Apply: pupils explain what encryption protects.

Check for understanding

Student explains what encryption protects against and what it does not.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 43 — Proving Who You Are

Week 9, Day 3 · Unit 3 · Standards: CS.NI.6-8.1

Focus	Authentication.
Learning target	"I can identify common methods of securing data."
Vocabulary in use	encryption, authentication, backup
Local date	_____

Learning sequence

Connect: encryption. Teach: passwords, passphrases, second factors and why a second factor helps so much - and what makes a password strong, in terms of length and unpredictability rather than punctuation tricks. NO PUPIL SHARES, TYPES OR DISCUSSES A REAL PASSWORD OF THEIR OWN. Try: shared analysis of made-up examples. Apply: pupils explain what authentication protects. Reflect: strength is a property of the method, not a ritual.

Check for understanding

Student explains what makes a passphrase strong.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 44 — Who Is Allowed What

Week 9, Day 4 · Unit 3 · Standards: CS.NI.6-8.1

Focus	Access control.
Learning target	"I can identify common methods of securing data."
Vocabulary in use	encryption, authentication, backup
Local date	_____

Learning sequence

Connect: authentication. Teach: that being identified and being permitted are different things, and that most real data loss is someone permitted to see more than they needed. Try: shared design of permissions for an imagined system. Apply: pupils assign least-privilege access. Reflect: an idea that transfers well beyond computing.

Check for understanding

Student assigns permissions on a least-privilege basis.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 45 — Backups and What They Protect

Week 9, Day 5 · Unit 3 · Standards: CS.NI.6-8.1

Focus	CS.NI.6-8.1 assessed.
Learning target	"I can identify common methods of securing data."
Vocabulary in use	encryption, authentication, backup
Local date	_____

Learning sequence

Connect: access control. Teach: that backup protects against the threats the other three do not - deletion, corruption, hardware failure, ransom - and that an untested backup is a hope rather than a method. Try: shared listing. Apply: pupils identify methods across all four kinds with limits. Reflect: this week's standard recorded.

Check for understanding

Student identifies four kinds of method and a limit of each.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Important before you buy

- This is a **digital download**. Nothing is shipped.
- The planner is **calendar-neutral**: Month 1–9, Week 1–36, Day 1–180, so it fits any school calendar. You add your own dates.
- Standards were transcribed from the official source.
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Pages use a minimum 8-point type size, high-contrast text, wide writing areas, print-safe margins, numbered pages and a bookmarked navigation outline. Colour and ink-friendly versions are supplied, and no information is conveyed by colour alone.

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Source citation

Montana Office of Public Instruction. Montana Content Standards for Computer Science (2021). Codes and statements are transcribed from the MONTANA CONTENT STANDARDS FOR COMPUTER SCIENCE FOR K-12, which records on every page "Document Created April 5, 2021 | Standards Effective date July 1, 2021". It was produced on the same day, in the same template and with the same coding scheme as the social studies standards: SUBJECT.STANDARD.GradeLevel SUBSTANDARD.sub-substandard, with CS computer science and the content areas AP algorithms and programming, CS computing systems, DA data and analysis, IC impacts of computing and NI networks and the internet. THE SAME SINGLE-STANDARD RULE APPLIES: an area with one standard at a grade states it on the area line and its code ends at the grade, with no final number. NOT EVERY CONTENT AREA APPEARS AT EVERY GRADE -- networks and the internet has no standards in the earliest grades -- and no standard is invented to fill the gap. A TYPOGRAPHICAL ERROR IN THE SOURCE IS RECORDED RATHER THAN CORRECTED IN SILENCE: the kindergarten data and analysis stem reads "standards TO kindergarten" where every other stem reads "for". It affects a stem line rather than a standard, so no registered statement is changed by it. MONTANA WRITES COMPUTER SCIENCE AS ONE BAND FOR GRADES 6, 7 AND 8, not as three grades. The band holds TWENTY-THREE standards across algorithms and programming, computing systems, data and analysis, impacts of computing, and networks and the internet, and this year registers ALL TWENTY-THREE. BECAUSE THE BAND IS SHARED, THE GRADE 6 PRODUCT IN THIS SERIES CITES THE SAME TWENTY-THREE CODES -- the years differ in what pupils build, not in which standards they are held to. THIS ONE GOES FURTHER: functions and parameters, pseudocode with compound conditionals, nested control structures, automating a process, social engineering and its countermeasures, comparing transfer protocols and storage structures, diagramming a network, encryption methods, choosing a kind of model and the data it needs, classifying assistive technologies, and human against artificial intelligence. ONE WEEK IS REGISTERED AGAINST NO STANDARD AND THAT IS DELIBERATE: the keyboarding-fluency week has no counterpart anywhere in this state's computer science

standards, and it is taught because it is worth teaching rather than to fill a row in the alignment table. NO ACCOUNT IS CREATED AND NOTHING IS PUBLISHED OUTSIDE SCHOOL; the weeks that need devices are marked so a shared trolley can be planned, and all planning is on paper. Retrieved 2026-07-27 from <https://opifiles.mt.gov/Portals/182/Page%20Files/K-12%20Content%20Standards%20%26%20Revision/Computer%20Science/CS%20K12.pdf>