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# North Carolina 10 Biology – Alternate Sequence

**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            | North Carolina                                               |
| Grade            | 10 (High)                                                    |
| Subject          | Biology – Alternate Sequence                                 |
| Course category  | Science                                                      |
| Standards family | Science                                                      |
| Framework        | North Carolina Standard Course of Study, K-12 Science (2023) |
| Issuing agency   | North Carolina Department 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 — Holding Steady

### Unit 3: Keeping a Cell Alive · Month 3 · Quarter 1 · Semester 1 · Instructional Days 41–45

|                    |                                                                                                                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Essential question | How does a cell keep its inside different from its outside?                                                                                                                                                                                                                                                                                 |
| Standards          | <b>Regulating Cellular Processes</b> -> <b>LS.Bio.3.1 LS</b> — Carry out investigations to explain how homeostasis is maintained through feedback mechanisms.<br><b>LS.Bio.1.2 LS</b> — Carry out investigations to illustrate how enzymes act as catalysts for biochemical reactions and how environmental factors affect enzyme activity. |
| Learning target    | "I can explain homeostasis and distinguish active from passive transport."                                                                                                                                                                                                                                                                  |
| Local dates        | _____ (enter your school dates)                                                                                                                                                                                                                                                                                                             |

### Measurable objectives

- Students will engage in argument from evidence to explain the regulation of cellular processes that maintain homeostasis, including active and passive transport.

### Success criteria (student-friendly)

- "I define homeostasis in terms of a maintained difference."
- "I distinguish active from passive transport by energy use."
- "I predict the direction of movement from a gradient."

### Academic vocabulary

homeostasis, gradient, diffusion, osmosis, active transport, passive transport

### Materials and technology

- Notebooks
- Printed data
- Chart paper
- Water, salt and dialysis or similar as available

### 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**

Transport type predicted and justified from evidence.

**Family communication**

Ask your child what a cell has to spend energy on.

## Day 41 — A Difference That Has to Be Maintained

Week 9, Day 1 • Unit 3 • Standards: LS.Bio.3.1, LS.Bio.1.2

|                   |                                                                                |
|-------------------|--------------------------------------------------------------------------------|
| Focus             | The idea.                                                                      |
| Learning target   | "I can explain homeostasis and distinguish active from passive transport."     |
| Vocabulary in use | homeostasis, gradient, diffusion, osmosis, active transport, passive transport |
| Local date        | _____                                                                          |

### Learning sequence

Connect: the membrane. Teach: homeostasis as maintaining an internal state DIFFERENT from the surroundings, and why any such difference tends to disappear on its own. Try: shared listing of differences a cell maintains. Apply: students list four and say which way each would drift. Reflect: maintaining a difference always costs something.

### Check for understanding

Student states what homeostasis maintains and why it costs energy.

### 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 — Passive Movement

Week 9, Day 2 · Unit 3 · Standards: LS.Bio.3.1, LS.Bio.1.2

|                   |                                                                                |
|-------------------|--------------------------------------------------------------------------------|
| Focus             | Down the gradient.                                                             |
| Learning target   | "I can explain homeostasis and distinguish active from passive transport."     |
| Vocabulary in use | homeostasis, gradient, diffusion, osmosis, active transport, passive transport |
| Local date        | _____                                                                          |

### Learning sequence

Connect: drift. Teach: diffusion and osmosis as movement down a gradient requiring no energy from the cell, with the direction predictable from the gradient alone. Try: shared prediction for four situations. Apply: students predict direction for five. Reflect: passive does not mean unimportant; it means free.

### Check for understanding

Student predicts the direction of passive movement.

### 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 — Active Transport

Week 9, Day 3 · Unit 3 · Standards: LS.Bio.3.1, LS.Bio.1.2

|                   |                                                                                |
|-------------------|--------------------------------------------------------------------------------|
| Focus             | Against the gradient.                                                          |
| Learning target   | "I can explain homeostasis and distinguish active from passive transport."     |
| Vocabulary in use | homeostasis, gradient, diffusion, osmosis, active transport, passive transport |
| Local date        | _____                                                                          |

### Learning sequence

Connect: passive movement. Teach: transport AGAINST a gradient, why it must consume energy, and how to tell the two apart from evidence rather than by being told. Try: shared analysis of two data sets, deciding which transport is involved. Apply: students classify three cases from evidence. Reflect: movement against a gradient is the signature of active transport.

### Check for understanding

Student classifies transport from evidence.

### 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 — Investigating a Gradient

Week 9, Day 4 · Unit 3 · Standards: LS.Bio.3.1, LS.Bio.1.2

|                   |                                                                                |
|-------------------|--------------------------------------------------------------------------------|
| Focus             | Practical.                                                                     |
| Learning target   | "I can explain homeostasis and distinguish active from passive transport."     |
| Vocabulary in use | homeostasis, gradient, diffusion, osmosis, active transport, passive transport |
| Local date        | _____                                                                          |

### Learning sequence

Connect: prediction. Teach: an investigation into movement across a barrier at different concentrations, run with ordinary materials. SAFETY: eye protection where anything can splash; nothing tasted or smelled; hands washed afterwards; NO HUMAN OR ANIMAL MATERIAL IS USED. NO-EQUIPMENT ROUTE: a supplied real data set gives the same analysis, and the standard is met by analysing it. Try: shared setup and prediction. Apply: students run or analyse and record results. Reflect: record what happened, including if it disagreed with your prediction.

### Check for understanding

Student records and interprets transport data.

### 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 — Arguing From the Evidence

Week 9, Day 5 • Unit 3 • Standards: LS.Bio.3.1, LS.Bio.1.2

|                   |                                                                                |
|-------------------|--------------------------------------------------------------------------------|
| Focus             | The standard's verb.                                                           |
| Learning target   | "I can explain homeostasis and distinguish active from passive transport."     |
| Vocabulary in use | homeostasis, gradient, diffusion, osmosis, active transport, passive transport |
| Local date        | _____                                                                          |

### Learning sequence

Connect: results. Teach: building an argument from the week's evidence that regulated transport maintains homeostasis, and answering a challenge. Try: shared drafting. Apply: students write one argument and answer one challenge. Reflect: the argument rests on your data, not on the textbook.

### Check for understanding

Student argues from evidence for regulated transport.

### 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

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- 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.
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## Source citation

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