

■ **Science Curriculum Updates: PA STEELS**

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Overview

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**Required Shifts
in the PA STEELS**

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**Professional
Development &
Curriculum Update**

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**Current Course
Structures**

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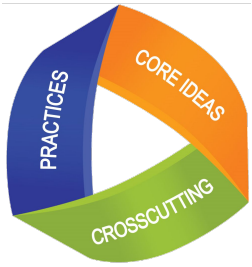
**Proposed
Modifications:
Curriculum and Course
Structure**

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Key Considerations

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Next Steps



Shifts in Curriculum & Instruction with STEELS

Curriculum

- Three Dimensional Performance Expectations
- Earth, Space, Life, Physical Science, *and* Environmental Literacy
- Meaningful Watershed Educational Experiences (MWEE)
- Technology & Engineering

Instruction & Pedagogy

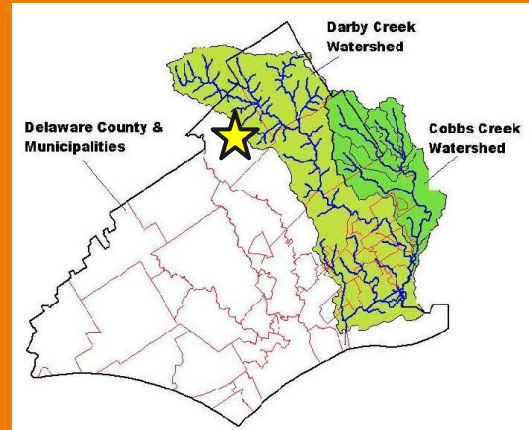
- Phenomena-based to foster sense-making
- Focus on inquiry and problem-solving

Assessment

- Performance-based (3D)

Heightened Focus on Environmental Literacy & Sustainability

- Unhealthy watersheds in PA, including Darby Creek Watershed → Delaware River Basin
- Changes in climate, pollution, environmental degradation → public health and wellbeing
- Desire for students to understand how local actions can impact water quality and the environment downstream.



Professional Development and STEELS Integration Progress

AWARENESS

- Deep dive into the new performance expectations
- Teacher professional development @ MNSD
- Resource sharing

RESOURCES

Elementary

- TWIG Pilot (Nov)
- SAVVAS Pilot (Feb)

Middle School

- TWIG pilot (Oct)
- OpenSciEd pilot (Nov)

High School

- Core resource ✓
- Supplemental (in progress)

CURRICULUM

For implementation in 25-26:

- Elementary (in progress)
- Middle School (in progress)
- Integrated Science (in progress)
- Biology ✓
- Chemistry ✓
- Physics (in progress)
- Electives (in progress)

ASSESSMENT

- Teacher professional development @ MNSD and paid workshops
- Focus on building performance assessments in 24-25

INSTRUCTION

- Teacher professional development @ MNSD and paid workshops
- Focus on integrating phenomena in 23-25
- Focus on evolving pedagogy 23-26

COMMUNICATION

- Tigers pride infographic (June 2024)
- Focus on additional community learning opportunities in 24-25

Essential Actions for STEELS Alignment

1. Include **3D** components in curriculum & assessment
2. Integrate **Environmental Literacy**
3. Integrate **Technology & Engineering**
4. Add **MWEE** to elementary, middle, and high school

Current Course Content

Elementary	K	1st	2nd	3rd	4th	5th
Current Sequence	Unit Topics (Life, Physical, Earth)					

New Course Content

Elementary	K	1st	2nd	3rd	4th (includes MWEE)	5th
NEW Sequence Technology & Engineering	Integrated Topics (Earth, Space, Life, Physical) + Environmental Literacy					



Current Course Structures

MS	Grade 6	Grade 7	Grade 8
Standard Sequence	Integrated Topics (Earth, Space, Life, Physical)		
Advanced Sequence	Integrated Topics + some Grade 7	Integrated Topics + some Grade 8	Integrated Topics + HS Integrated Science

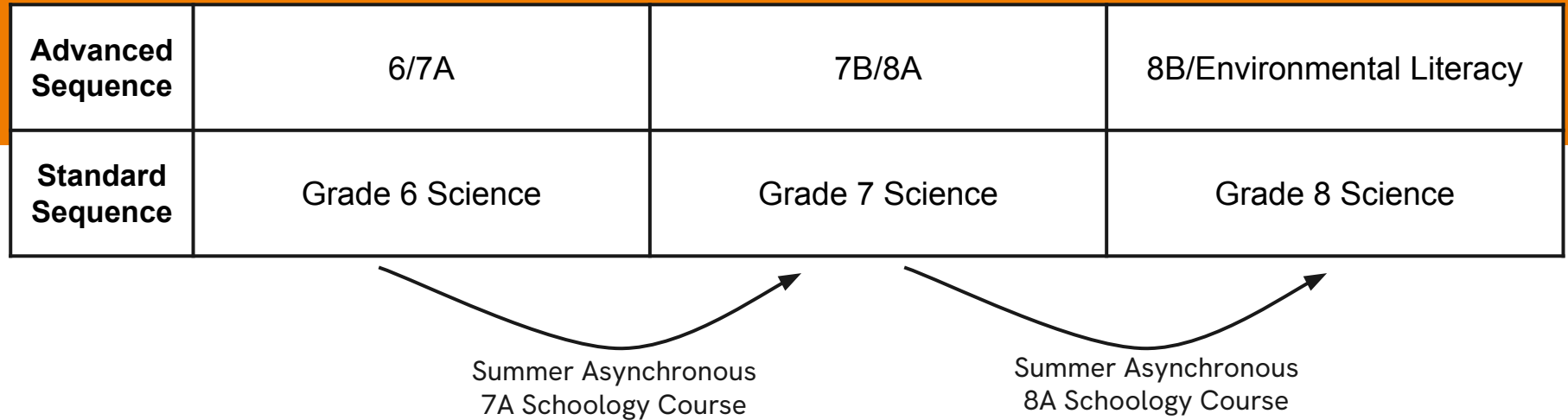
HS	Credit 1	Credit 2	Credit 3	Credit 4 (optional)
Standard Sequence	Integrated Science	Biology	Chemistry	Physics, AP Science, or Electives
Advanced Sequence	Biology	Chemistry	Physics	AP Science or Electives

Proposed Course Structures

MS	Grade 6	Grade 7 (includes MWEE)	Grade 8
Standard Sequence	Integrated Topics (Earth, Space, Life, Physical, + Environmental Literacy)		
Advanced Sequence	Integrated Topics + some Grade 7	Integrated Topics + some Grade 8	Integrated Topics + HS Environmental Literacy

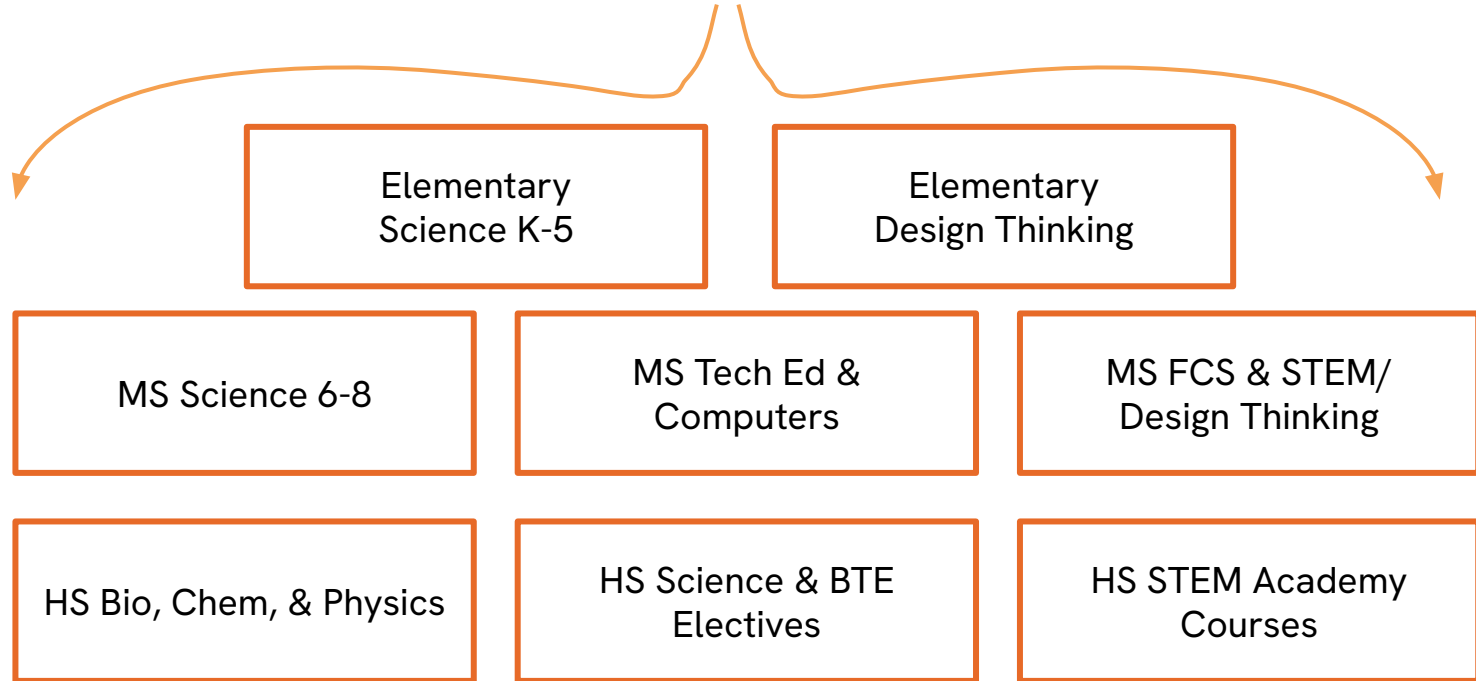
HS	Credit 1	Credit 2	Credit 3	Credit 4 (optional)
Standard Sequence	Environmental Literacy & Sustainability (includes MWEE)	Biology	Chemistry	Physics, AP Science, or Electives (including Astronomy)
Advanced Sequence	Biology	Chemistry	Physics	AP Science or Electives (including Astronomy)

Build in Equitable Opportunity at the Middle School



*Consider Similar Model for 6-8 Math

Technology & Engineering Integration



Essential Actions for STEELS Alignment

- ✓ Include **3D** components in curriculum & assessment
- ✓ Integrate **Environmental Literacy**
- ✓ Integrate **Technology & Engineering**
- ✓ Add **MWEE** to elementary, middle, and high school

Key Considerations



Certifications



Scheduling



Curriculum Writing



Resources



Communication



Community Culture

Next Steps

Ongoing Professional Development

Fall 2024

- ✓ MS pilots complete
- ✓ STEELS plan communicated to stakeholders

Spring 2025

- ✓ Elementary pilots complete, resource selected, training scheduled
- ✓ MS resource selected, training scheduled
- ✓ Environmental Literacy course approved
- ✓ Astronomy course approved
- ✓ MWEE trips approved

Summer 2025

- ✓ Elementary curriculum updates and purchases complete
- ✓ HS & MS curriculum updates complete
- ✓ HS & MS common assessments complete
- ✓ HS supplemental resource selected
- ✓ All new curriculum approved

Fall 2025 - Full Implementation

- ✓ Summer asynchronous courses complete
- ✓ Management of summer course decided
- ✓ Administration is updated
- ✓ Community is updated



■ Questions