


Alignment of Investigations to Washington State Learning Standards

An important element of the project undertaken for the Department of Ecology was to demonstrate how the investigations meet or match Washington State's Learning Standards. It is important for teachers and administrators to be able to explain how work being undertaken by students in the classroom aligns with these standards. The following two pages provide this alignment for the twelve investigations.

The vast majority of students participating in the Watershed Monitoring Network are in grades 4 through 8. Of the 102 classes monitoring in the 2014-15 school year, only 10 do not fall in the grades 4 through 8 range. Therefore, the investigations were written to primarily target those students in grades 4 through 8 with the suggestion that teachers can pick and choose among the investigations and make any modifications need to tailor the content for their particular grade level/classes. Most investigations can also be easily used with general high school science classes.

Existing or previous essential academic learning requirements (EALRS) and grade level expectations (GLEs) have been tied to assessment in different grades for different content areas. The new Common Core standards have just been fully implemented in the 2014-2015 school year to assess reading, writing and math in grades 4 and 7 and high school. Other assessments, such as the EOC (End of Course) for high school mathematics and biology is only done in grade 10.

The twelve investigations developed by the Watershed Monitoring Network team are aligned in two separate documents: Grades 4-5 and grades 6-8. Each investigation was aligned with current Washington State K-12 learning standards, with math and language arts (ELA) Common Core and with the adopted but not yet implemented Next Generation Science Standards (NGSS). Please note: The Washington State 2009 K-12 Science Learning Standards are being phased out as the State transitions to the newly adopted [Washington State 2013 K-12 Science Learning Standards \(Next Generation Science Standards\)](#). The new standards describe what students should know and be able to do at each grade level.



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Elementary School (grades 4-5) Standards Alignment	Site Survey		Soil				Plant		Water Quality			
	Initial Site Assessment and Observations	Photo-point Monitoring	Soil Cores: Color, Texture and Moisture	Soil Temperature, Moisture and pH	Soil Permeability	Erosion Sources and Soil Compaction	Riparian Zone Vegetation Survey	Riparian Zone Tree Survey	Temperature, pH and Dissolved Oxygen	Nitrate and Phosphate	Turbidity and Stream Measurements	Macro- Invertebrate
Current WA State K-12 Learning Standards	INQA-D ES2C,F LS2A-F	INQA-D APPA ES2C,F LS2A-F	INQA-D APPA ES2A,C-F	INQA-D APPA ES2A,C,D LS2D-F	INQA-D APPA ES2A,C,E LS2D-F	INQA-D APPA ES2A,C LS2D-F	INQA-D APPA ES2F LS1A-D LS2A-F	INQA-D APPA ES2F LS1A-D LS2A-F	INQA-D APPA PS2C LS2A-F	INQA-D APPA LS2A-F	INQA-D ES2B-D LS2A-F	INQA-D LS1A-D LS2A-F LS3A,C
NGSS – Science and Engineering Practices												
Asking Questions and Defining Problems	•	•	•	•	•	•	•	•	•	•	•	•
Developing and Using Models	•	•	•	•	•	•	•	•	•	•	•	•
Planning and Carrying Out Investigations	•	•	•	•	•	•	•	•	•	•	•	•
Analyzing and Interpreting Data	•	•	•	•	•	•	•	•	•	•	•	•
Using Mathematics and Computational Thinking	•	•	•	•	•	•	•	•	•	•	•	•
Constructing Explanations and Designing Solutions	•	•	•	•	•	•	•	•	•	•	•	•
Engaging in Argument from Evidence	•	•	•	•	•	•	•	•	•	•	•	•
Obtaining, Evaluating and Communicating Information	•	•	•	•	•	•	•	•	•	•	•	•
NGSS - Disciplinary Core Ideas	ESS2.A-B,E ESS3.C	ESS2.A-B,E ESS3.C	ESS2.A LS2.B	ESS2.A LS2.B	ESS2.A	ESS2.A ESS3.C	ESS2.E ESS3.C LS1.A-C LS4.C-D	ESS2.E ESS3.C LS1.A-C LS4.C-D	PS1.A	PS1.B	ESS2.A	ESS2.A LS1.A-D LS2.A-C LS4.C-D
NGSS - Cross-Cutting Concepts												
Patterns	•	•	•	•	•	•	•	•	•	•	•	•
Cause and Effect	•	•	•	•	•	•	•	•	•	•	•	•
Scale, Proportion, Quantity	•	•	•	•	•	•	•	•	•	•	•	•
Systems and System Models			•	•	•	•	•	•	•	•	•	•
Energy and Matter			•	•	•	•	•	•	•	•	•	•
Structure and Function			•	•	•	•	•	•	•	•	•	•
Stability and Change	•	•	•	•	•	•	•	•	•	•	•	•
Common Core – Math	4.MD.A.2 MP.4	MP.2	MP.4	MP2	MP4	MP.4	MP2	MP.4	MP.2	MP.4	MP.2	MP.4
Common Core – ELA/Literacy	RI.4-5.7	W4-5.7	RI.4-5.7	W4-5.8	W4-5.8	W4-5.8	W4-5.8	W4-5.8	W4-5.7	W4-9.9	RI.4-5.7	W4-5.8

Middle School Standards Alignment	Site Survey		Soil				Plant		Water Quality			
	Initial Site Assessment and Observations	Photo-point Monitoring	Soil Cores: Color, Texture and Moisture	Soil Temperature, Moisture and pH	Soil Permeability	Erosion Sources and Soil Compaction	Riparian Zone Vegetation Survey	Riparian Zone Tree Survey	Temperature, pH and Dissolved Oxygen	Nitrate and Phosphate	Turbidity and Stream Measurements	Macro-Invertebrate
Current WA State K-12 Learning Standards	INQC LS2E	INQA APPC LS2D-E	INQA-C APPE ES2G LS2E	INQA-C LS2D-E	INQA-C APPE ES2C LS2E	INQA-C APPE PS1B LS2E	INQA-C APPE LS2D LS2E	INQA-C APPC LS2A,E	PS2B ES2D LS2E	INQA-C PS2C LS2E	PS1A ES2G LS2E	INQA-C LS2A,E LS3E
NGSS – Science and Engineering Practices												
Asking Questions and Defining Problems	•	•	•	•	•	•	•	•	•	•	•	•
Developing and Using Models	•	•	•	•	•	•	•	•	•	•	•	•
Planning and Carrying Out Investigations	•	•	•	•	•	•	•	•	•	•	•	•
Analyzing and Interpreting Data	•	•	•	•	•	•	•	•	•	•	•	•
Using Mathematics and Computational Thinking	•	•	•	•	•	•	•	•	•	•	•	•
Constructing Explanations and Designing Solutions	•	•	•	•	•	•	•	•	•	•	•	•
Engaging in Argument from Evidence	•	•	•	•	•	•	•	•	•	•	•	•
Obtaining, Evaluating and Communicating Information	•	•	•	•	•	•	•	•	•	•	•	•
NGSS - Disciplinary Core Ideas	ESS2.C	ESS2.C	ESS2.C LS2.A	LS2.A	ESS3.A LS2.B	ESS3.C LS2.C	ESS2.C LS2.A	ESS3.C	LS2.A	LS2.A PS1.B	ESS2.C	LS2.A,B
NGSS - Cross-Cutting Concepts												
Patterns	•	•	•	•	•	•	•	•	•	•	•	•
Cause and Effect	•	•	•	•	•	•	•	•	•	•	•	•
Scale, Proportion, Quantity	•	•	•	•	•	•	•	•	•	•	•	•
Systems and System Models			•	•	•	•	•	•	•	•	•	•
Energy and Matter			•	•	•	•	•	•	•	•	•	•
Structure and Function			•	•	•	•	•	•	•	•	•	•
Stability and Change	•	•	•	•	•	•	•	•	•	•	•	•
Common Core – Math	MP.2	RP.A.2	MP.4	SP.B.5	6.SP.B.5	MP.4	7.RP.A.2	6.RP.A.1	6.SP.B.5	6.SP.B.5	MP.2	6.RP.A.3
Common Core – ELA/Literacy	RST.6-8.9 WHST.6-8.7	RST.6-8.1 WHST.6-8.2	RST.6-8.7 WHST.6-8.2	RST.6-8.9 WHST.6-8.2	RST.6-8.1 WHST.6-8.2	RST.6-8.7 WHST.6-8.7	RST.6-8.1 WHST.6-8.2	RST.6-8.9 WHST.6-8.2	RST.6-8.7 WHST.6-8.7	RST.6-8.1 WHST.6-8.2	RST.6-8.9 WHST.6-8.7	RST.6-8.1 WHST.6-8.2