PROJECT OVERVIEW

Name of Project:	How Do Salmon Find Their Way Home?		**Duration:**	2 weeks
Subject/Course:	Science, Technology	**Teacher(s): Barten**	**Grade Level:**	4th
Other Subject Areas to Be Included, if any:	Art, Language Arts			

Project Idea Summary of the issue, challenge, investigation, scenario, or problem:	Many animals have been shown to have cells (ferrous) that respond to magnetic fields. Research is beginning in salmon to determine if magneto-reception is responsible for their ability to locate the stream of their origin. Students or the public in general may not be aware how important the natal stream is to salmon migration and spawning for the next generation.
Driving Question	How can we as students educate other students and the public about salmon migration and homing?
CCSS to be taught and assessed:	Energy and Force: Magnets & Electromagnetic Currents ,(4.1P.1) Compare and Contrast characteristics of living organisms (4.1L.1), Describe interactions of living organisms and their environment (4.2L.1), Scientific Method / Inquiry (4.3S.1, 4.3S.2)
Additional Standards to be taught and assessed:	Speaking Language Arts Writing

21st Century Competencies to be taught and assessed:	Collaboration	E	Creativity & Innovation	E
	Communication (Oral Presentation)	E	Information, Communication, Technology,	T&A
	Critical Thinking	T & A		

Major Products & Performances	Group:	Website: Students will build website about life cycle, migration, magneto-reception. Play: Students will write and perform play about salmon migration. Art: Students will create 3-D life size Chinook Salmon to install in classroom. Legos: Students will create models of Bonneville dam, hatchery center. Game: Students will design team game for gym. Photo/ Video Journal: Students will record PBL in photo and video to publish to web.	☒	**Presentation Audience**
				Class: Play, Legos, Game
				School: Play, Art, Game, Essays
				Community: Web
	Individual:	Essays: Students will write expository essay describing details about salmon life cycle, migration and / or habitat. Best submissions will be entered into school writing contest.		Experts: Web
				Web: Web
				Other:

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Entry Event to launch inquiry and engage students:					
Assessments	**Formative Assessments** (During Project)	Quizzes/Tests		Practice Presentations	
		Journal/Learning Log	X	Notes	X
		Preliminary Plans/Outlines/Prototypes		Checklists	
		Rough Drafts	X	Concept Maps	X
		Online Tests/Exams		Other:	
	Summative Assessments (End of Project)	Written Product(s), with rubric: _____	X	Other Product(s) or Performance(s), with rubric:_____	X
		Oral Presentation, with rubric	X	Peer Evaluation	
		Multiple Choice/Short Answer Test		Self-Evaluation	
		Essay Test		Other:	

Resources Needed	**On-site people, facilities:**	Joseph O'Neil (ODFW), Dr. David Noakes (OSU), Dr. Nathan Putman (Researcher), Christine Clapp (ODFW)
	Equipment:	Fish Aquarium (Fish Eggs, Hatch), Computers, ActiveBoard, Document Camera, Cell Phone Camera / Video, USB Cable, Dissection Tools / Parr.
	Materials:	Butcher Block Paper, Markers, Tape, Paints, Collage Papers, Glitter, Journals, Cardboard Boxes, Simple Costumes, Brushes, Mod Podge Glue
	Community / School resources:	Gymnasium, Internet Access, Computers, Technology Equipments, Hallway Space.

Reflection Methods	**(Individual, Group, and/or Whole Class)**	Journal/Learning Log		Focus Group	
		Whole-Class Discussion		Fishbowl Discussion	
		Survey	X	Other:	