Oregon STEM Week Toolkit
Resources for Educators and Community Partners

STEM Shaping the World We Live In
https://www.youtube.com/watch?v=biWQzIul-vE
Description: Energy Secretary Steven Chu and business leaders discuss how, with an understanding of Science and Math, individuals are shaping the world we live in.

Secrets of the Dead
http://www.pbs.org/wnet/secrets/
Description: This program and site introduce students to topics in chemistry, forensics, physical sciences and life sciences through the investigation of age-old mysteries. Many of the lesson plans are enhanced with streaming video.

Jean-Michel Cousteau: Ocean Adventures
http://www.pbs.org/kqed/oceanadventures/educators/
Description: Designed primarily for middle school educators and students, Ocean Adventures resources are appropriate for use in both formal and informal educational settings. They are aligned with National Science Content Standards and Ocean Literacy Essential Principles and Fundamental Concepts.

QUEST
http://science.kqed.org/quest
Description: QUEST aims to raise science literacy and inspire audiences to discover and explore science and environment issues for themselves. The series focuses on nine content areas: astronomy, biology, chemistry, climate, engineering, environment, geology, health, and physics.

Scientific American Frontiers
http://www.pbs.org/saf/educators.htm
Description: This program, hosted by Alan Alda, explores the latest trends in science, medicine, technology, and the environment. Each program is accompanied by an online, printable teaching guide with activity ideas and quizzes.

The Ascent of Money
http://www.pbs.org/wnet/ascentofmoney/lessons/
Description: This groundbreaking four-part series examines the creation of the economic system by taking viewers on a global trek through the history of money. Lesson plans explore the role of banks, the concept of insurance, the basics of the stock market, and entrepreneurship.

Middle School STEM Careers
http://www.teachersdomain.org/asset/wpsu09-stemcareers_vid_midschool/
Description: This brief video from WPSU introduces a diverse group of middle school students with common interests that relate to STEM careers. Whether creating robots or designing solar cars, each of the student dreams of activities beyond the stereotypical view of a nerdy scientist.

STEM Flix
http://www.northropgrumman.com/CorporateResponsibility/CorporateCitizenship/Education/STEMFlix/Pages/default.aspx/
Description: STEM Flix™ is a new, interactive video series provided for your viewing pleasure by the Northrop Grumman Foundation and Science Bob. And they are all about having fun with STEM.

Exploratorium
http://www.exploratorium.edu/
Description: The Exploratorium is a collage of 650 interactive exhibits in science, art, and human perception. Students can explore any of these subjects: light color, sound, music, motion, animal behavior, electricity, heat and temperature, language, patterns, hearing, touch, vision, waves and weather. (Grades 3-12)

National Geographic Weird Science
http://video.nationalgeographic.com/video/science/
Description: View national geographic videos that showcase the strange and exciting side of science in the areas of outer space, the human body, the pre-historic world, technology, biology and more!

National Science Foundation Videos
http://www.windows2universe.org/olpa/videos/videos_menu.html
Description: A variety of short films ranging from 1-30 minutes from the National Science Foundation hosted by Windows to the Universe covering a broad range of exciting scientific topics!

Brain POP
http://www.brainpop.com/

Sid the Science kid
http://pbskids.org/sid/videoplayer.html
Description: Each episode focuses on a single scientific concept that is presented using Preschool Pathways to Science (PrePS©), a practical science readiness curriculum used in preschool classrooms.

Dragon Fly TV
http://pbskids.org/dragonflytv/watch/index.html
Description: This program provides children with opportunities to explore science and engineering to share the excitement of scientific discovery. The website includes a wealth of science related games, activities, and streaming video.

The Cat in the Hat Knows a Lot About That!
http://pbskids.org/catinthehat/
Description: Discover the joy and wonder of science with Cat and his friends as he takes preschoolers on fun filled adventures where they make natural-science discoveries, from how bees make honey to why owls sleep during the day.

SciGirls
http://pbskids.org/scigirls
Description: SciGirls is out to change how tweens think about science, technology, engineering and math. In each episode, join bright, curious real girls in putting STEM to work. Then check out the website to play games, watch episodes, share projects, and connect with other SciGirls in a totally safe social networking environment!

NEO k12
http://www.neok12.com/
Description: A repository of educational videos with corresponding games and lesson plans that include physical science, life science, geography, biology, as well as earth and space.

Exploratorium
http://www.exploratorium.edu/
**Description:** The Exploratorium is a collage of 650 interactive exhibits in science, art, and human perception. Students can explore light color, sound, music, motion, animal behavior, electricity, heat and temperature, language, patterns, hearing, touch, vision, waves and weather. (Grades 3-12)

**National Geographic Weird Science**
http://video.nationalgeographic.com/video/science/
**Description:** View national geographic videos that showcase the strange and exciting side of science in the areas of outer space, the human body, the pre-historic world, technology, biology and more!

**NASA’s The SPACE PLACE**
http://spaceplace.nasa.gov/menu/explore/
**Description:** Here kids of all ages can have fun learning and exploring the world around us. NASA brings you an exciting way to look at our Sun and Earth, our solar system and the universe beyond with numerous video topics to choose from.

**Zane Education**
**Description:** A selection of 30 of online Elementary Science videos provides students with the opportunity to learn about a basic science program. Each title introduces a lovable character who takes your child on a trip through the world of plants, the animal kingdom, the solar system, the earth, and the human body.

**Scholastic Study Jams**
http://studyjams.scholastic.com/studyjams/index.htm
**Description:** Scholastic hosted site full of over 200 short, upbeat educational videos on math & science topics. The videos are organized by topic, so you can just find the video that matches the educational concept you’re covering!

**PBS Science Games for 1st and 2nd Grade**
**Description:** Try some of these free science games for grades 1 and 2 featuring PBS KIDS characters to boost your students’ early development of science skills and interest in science.

**Cyber Chase**
http://www.pbs.org/parents/cyberchase/activities/
**Description:** An entertaining variety of extensive math activities that engage students in math skills for use in your elementary classroom.
PBS EcoInvestigators
http://www.pbs.org/teachers/ecoinvestigators/
**Description:** PBS and International Paper introduce EcoInvestigators! Students can use this website to build knowledge and develop projects that address local community and its environment. The site includes lesson plans, project ideas, media assets and assessments rubrics related to four primary environments: Air, Land, Freshwater, and Saltwater. (Grades 3-5)

STEKCHUP for K-12 Education
**Description:** K-12 educators and students from all over the world use SketchUp to explore, explain and present their ideas using 3D models.

Khan Academy
http://www.khanacademy.org
**Description:** Short (less than 10 min) explanations of everything from accounting to physics. (K-12)

Engineering- Go for It
http://teachers.egfi-k12.org/
**Description:** A repository of lesson activities divided by grade level and resources sponsored by the American Society for Engineering Education (ASEE). The site contains many exciting "buzz" topics of interest for teachers and students!

Illuminations
http://illuminations.nctm.org/ActivitySearch.aspx
**Description:** Over 100 online STEM skill-based interactive activities that students can engage in immediately. Categorized by grade for teachers!

NASA Kid's Club
http://www.nasa.gov/audience/forkids/kidsclub/flash/index.html
**Description:** Fun interactive space learning activities featuring familiar characters that students can engage in immediately like Elmo Visits NASA, and Buzz Lightyear Returns from Space.

Interactive Periodic Table
http://www.webelements.com/
**Description:** A helpful interactive periodic table where students can explore every aspect of the elements including history, biology, physics, compounds, electronegativity and more!

Wonderville
http://www.wonderville.ca/
Description: Explore exciting careers in science and technology, participate in innovative interactive games, and find effective STEM based lesson plans. Specific categories include resources for youth, families and teachers. (Grades 6-9)

HHMI’s Bio Interactive
http://www.hhmi.org/biointeractive/
Description: A diverse resource for teachers and students from the Howard Hughes Medical Institute, this website examines everything from evolution to neuroscience and features videos, animations, interactive activities, a virtual lab, and much, much more! (Grades 9-12)

Shodor
http://www.shodor.org/interactivate/
Description: Entertaining interactive modules for students that allow them to apply math skills through fun activities. Program topics include standard deviations, independent and dependant variables, initial velocity, energy, and many more. (Grades 9-12)

Nova
http://www.pbs.org/wgbh/nova/
Description: Focusing on a range of exciting STEM topics including engineering and tech, body and brain, space and flight, military and espionage, and more, this interactive site allows students to virtually build rockets, rebuild ancient ruins, investigate the force of impact, research solar storms, map the human heart and other innovative and fun online activities. The site also offers an extensive collection of teacher’s guides with viewing ideas and classroom activities, interactive and related resources. (Grades 6-12)

Steve Miller’s Math Riddles
http://mathriddles.williams.edu/
A collection of math riddles and challenges that you can sort by topic and difficulty level.

Women@NASA
http://women.nasa.gov/
Description: This website includes a stunning collection of 64 videos and essays from women across the agency who contribute to NASA’s mission in many different ways.

Kids Invent
http://kidsinvent.com/
Description: Kids Invent! is the world’s leading provider of innovation based kids science activities that stimulate the creative interests and abilities of children ages 7 - 15.
Northwest Invention Center
http://nwinvent.blogspot.com
**Description:** A collection of STEM related activities using simple materials, and includes links to additional resources including videos

Code.org
http://code.org/
**Description:** Code.org believes *Every student in every school should have the opportunity to learn computer science.* Consider hosting an *Hour of Code* or give students the opportunity to explore their online tutorials.

Engineering is Elementary’s Engineering Adventures
http://www.eie.org/engineering-adventures
**Description:** A free curriculum created especially for kids in out-of-school time programs. Follow the adventurous duo India and Jacob around the world and solve real-life problems through their engineering adventures. (Grades 3-5)

PBS Kid’s Design Squad Nation
http://pbskids.org/designsquad/
**Description:** Learn engineering design by playing games, building stuff, or watching videos. Resources for parents and educators too!

NASA Educational Resources
http://www.nasa.gov/offices/education/about/index.html
**Description:** A collection of educational resources for educators (organized by grade-level) and STEM activities for students

Discovery Education Resources
http://www.discoveryeducation.com/teachers
**Description:** A broad range of free classroom resources that complement and extend learning beyond the bell.

Sally Ride Science: STEM Central
https://sallyridescience.com/stem-central/home
**Description:** A set of reviewed, rated, and ready to use resources for STEM topics and careers.

STEM² – The Power of Discovery
http://powerofdiscovery.org/curriculum_activity
**Description:** A collection of quality curriculum, activities, competitions, events, and programs in STEM.
The Ultimate STEM Guide for Kids
Description: 239 cool sites about science, technology, engineering and math.

NEA’s 10 Best STEM Resources
http://www.nea.org/tools/lessons/stem-resources.html
Description: National Education Association’s listing of top 10 STEM resources for preK-12.

How to Smile.org
http://howtosmile.org/
Description: All the best science and math activities especially designed for those who teach school-age kids in non-classroom settings. Brought to you by six major science museums dedicated to bringing STEM into the wider world.