OTTAWA CATHOLIC SCHOOL BOARD

Grade 9-12 Science Resources - Spring 2020

Reminder: Educators must not direct students to:

- use tools, equipment, products or chemicals that pose a safety risk,
- perform tasks or activities that pose a safety risk or require supervision, or
- ask students to purchase resources or materials for project work from their local store.

Grade Level	Link/Description
Grade 9	**Matter:** ● PhET Build an atom ● Virtual Lab: Physical and Chemical Changes ● Physics Classroom: Properties ● At home lab: Using dissolving to identify an unknown ● Coding: Build a Bohr (Science North) **Ecology**: ● Gizmos: Forest Ecosystem, Pond Ecosystem or Rabbit Population ● Virtual Lab: Ecosystems, Organisms and Trophic Levels ● At home lab: **Electricity**: ● Nova Labs: Energy Lab ● Gizmos: Circuits, Circuit Builder or Advanced circuits ● Physics Classroom: Circuits ● PhET: Balloons and Static Electricity ● At home lab: Charging by Friction, Conductivity Meter (requires lots of materials), Holding Charge **Space**: ● Nova Labs: Sun Lab ● PhET: Gravity and orbits ● At home lab: Moon lander
Grade 10	**Reactions** ● Naming ● Physics Classroom Concept Builders (Formulas, Balancing, Reactions etc…) ● At home lab: Conservation of Mass **Climate Change** ● Graphing CO2 ● At home lab: Egg Shell Inquiry (Science North) **Optics** ● The Physics Classroom (light and colour, reflection and mirrors, refraction and lenses) ● Disappearing Penny ● At home lab: The Hidden World (Science North) **Systems** ● Virtual Lab: Cell Cycle and Cancer ● Systems: Respiratory, Circulatory (Gizmos), Digestive

	(Gizmos) • Dissection: Frog or Earthworm • At home lab: Skin size, Cell Differentiation (S. Clark)
Grade 11/12 Biology	Viral Packaging Virtual Biology Labs (NSTA) Virtual Microscope Virtual Frog Dissection WOW Biolabs Learn Genetics (University of Utah) Glencoe Virtual Labs Pearson Lab Bench McGraw Hill Virtual Labs NOVA Labs Exploratorium Science Snacks - Biology (good at-home labs) Explore Learning Gizmos and STEM case studies Biology corner www.biologycorner.com
Grade 11/12 Chemistry	At home lab: Trends Physics Classroom Concept Builders (reactions, mole conversions, pH, gases)(VSEPR, electron config, energy, equilibrium) PhET Simulations (chemistry simulations and interactive lab activities, 93 language translations) Virtual Molecules MolView Virtual Chemistry Labs (Chem Collective) Glencoe Virtual Labs

	Exploratorium Science Snacks - Chemistry (good at-home labs) Explore Learning Gizmos and STEM case studies
Grade 11/12 Physics	The Physics Classroom (tutorials, interactives, concept builders, shockwave physics studio) PHet simulations Virtual Physics Labs (My Physics Lab) HTML5 Physics Simulations (EdInformatics) Glencoe Virtual Labs Exploratorium Science Snacks - Physics (good at-home labs) Explore Learning Gizmos and STEM case studies Apps on Physics
Grade 11 Env. Science	Exploratorium Science Snacks (good at-home labs)
Grade 12 Earth and Space	Exploratorium Science Snacks (good at-home labs)

TEXTBOOKS:
Pearson Grade 7-10, Grade 11 Bio and Physics (you have to register, and "purchase" the textbook you want, but the cost is $0.00)
Nelson All science courses 7-12, except Grade 8 (not the greatest platform, but it's a start - follow the steps outlined, and you get a general username and password to use.)
Username: on912
Password: NelsonON123
CK-12 From the US, but a better platform.
NSTA: From the US, but looks like some good content that is free

Other resources:
Ayva Distance Learning - Labs
Flinn Scientific At-home Science
Boreal Free Distance Learning Software
Let's Talk Science

STAO Online resources: https://mailchi.mp/stao.ca/staonews-march252020?mc_cid=a97b5725c2&mc_eid=194c114c83