Typical Physics 1 syllabus (Mechanics) and suitable PhET Sims.

0) Algebra, trigonometry, unit conversion, taking derivatives
   Graphing Lines / Calculus Grapher

1) 1D Kinematics : x, v, a vs t graphs, constant acceleration formulas
   The Moving Man / Ramp: Forces and Motion / Calculus Grapher

2) Vector math: addition and subtraction of vectors, components of a vector
   Vector Addition

3) Motion in 2D: Vector acceleration, v_1-v_2-Δv diagrams, 2D projectile motion, circular motion
   Vector Addition / Projectile Motion / Lunar Lander / Motion in 2D / Maze Game
   Ladybug Revolution / Pendulum Lab

4) Newton's Laws, free-body diagrams, kinetic and static friction
   Forces and Motion / Forces in 1 dimension / Ramp: Forces and Motion / Friction / Torque

5) $\mathbf{F}_{net} = m\mathbf{a}$ problems: FBDs, coordinate systems, $\sum F_x = ma_x$, $\sum F_y = ma_y$
   Forces and Motion / Pendulum Lab / Torque

6) Work and energy, KE and PE, conservation of energy, power
   Masses and Springs / Pendulum Lab / Energy Skate Park / The Ramp

7) Gravity: $F_{grav} = GMm/r^2$, $g = GM/r^2$, orbits, escape velocity
   Force Law Lab / My Solar System / Gravity and Orbits

8) Conservation of linear momentum; impulse $= \Delta\mathbf{p} = \mathbf{F}_{net}\,\Delta t$
   Collision Lab

9) Rotational motion: θ, ω, α ; torque $\tau = r\,F_\perp$; $\tau = I\,\alpha$; $KE_{tot} = KE_{trans} + KE_{rot}$
   Ladybug Revolution / Torque / Motion in 2D / Ladybug Motion 2D

10) Conservation of Angular Momentum, $\vec{L} = \vec{r} \times \vec{p}$, $\vec{L} = I\vec{\omega}$, $\vec{L}_{tot} =$ constant if $\vec{\tau}_{ext} = 0$
   Torque

11) Static Equilibrium: $\sum F_x = 0$, $\sum F_y = 0$, $\sum \tau = 0$
   Balancing Act

12) Simple Harmonic Motion: $\omega = 2\pi/T = \sqrt{k/m}$, damped, driven SHO
   Masses and Springs / Pendulum Lab / Resonance

13) Fluids: density ρ, pressure p, buoyant force / Archimedes' Principle
   Buoyancy / Balloons and Buoyancy / Fluid Pressure and Flow / Under Pressure

14) Traveling waves, sound waves, $v_{wave} = \lambda\,f$, Superposition Principle, standing waves
   Wave on a String / Sound / Wave Interference / Fourier: Making Waves

15) Thermo: specific heat c, $\Delta Q = m\,c\,\Delta T$ or $\Delta Q = m\,L$, ideal gases, heat transfer mechanisms
   Friction / States of Matter / Gas Properties / Blackbody Spectrum

Typical Physics 2 syllabus (E&M, Optics) and suitable PhET Sims.

1) Coulomb's Laws and E-fields
   **Vector Addition / Charges and Fields / Balloons and Static Electricity / John Travoltage
   Electric Field Hockey**

2) Gauss's Law
   Charges and Fields

3) Voltage
   Energy Skate Park (for review of work and energy) / **Charges and Fields**

4) Capacitance
   Capacitor Lab

5) Electric Current: Ohm's Law, resistance and resistivity, simple circuits, power
   **Ohm's Law / Resistance in a Wire / Battery-Resistor Circuit /
   Circuit Construction Kit (DC Only)**

6) DC circuits: series and parallel elements, ammeters and voltmeters
   Circuit Construction Kit (DC Only)

7) RC circuits
   Circuit Construction Kit (AC+DC)

8) Magnetism I: Lorentz Force Law, forces on current-carrying wires, motors

9) Magnetism II: Sources of the B-field, Biot-Savart Law, Gauss's Law for B-fields, Ampere's
   Law, permanent magnets
   Magnet and Compass / Magnets and Electromagnets

10) Faraday's Law: emf, Lenz's Law, generators, eddy currents
    Faraday's Law / Faraday's Electromagnetic Lab / Generator

11) Inductors, Transformers, LC and LRC circuits
    Faraday's Electromagnetic Lab / Circuit Construction Kit(AC+DC) / Generator

12) Electromagnetic Waves, polarization of light
    Wave on a String (as mechanical example of transverse wave) / **Radiating Charge
    Radio Waves and Electromagnetic Field / Blackbody Radiation / Fourier: Making Waves**

13) Ray optics: reflection, Snell's Law, lenses and image formation, camera and eye
    Bending Light / Geometric Optics / Color Vision

14) Physical optics: Diffraction and Interference
    Bending Light / Wave Interference / Fourier: Making Waves