

Tools/Equipment

Kindergarten	Grade 1	Grade 2
<ul style="list-style-type: none"> • safety goggles or chemical splash goggles • computing devices • hand lenses • primary balances • cups • bowls • magnets • collecting nets • notebooks • timing devices • non-standard measuring items • weather instruments <ul style="list-style-type: none"> - demonstration thermometers • materials to support observations of habitats of organisms <ul style="list-style-type: none"> - terrariums - aquariums 	<ul style="list-style-type: none"> • safety goggles or chemical splash goggles • computers • hand lenses • primary balances • cups • bowls • magnets • collecting nets • notebooks • timing devices • non-standard measuring items • weather instruments <ul style="list-style-type: none"> - demonstration thermometers - wind socks • materials to support observations of habitats of organisms <ul style="list-style-type: none"> - aquariums - terrariums 	<ul style="list-style-type: none"> • safety goggles or chemical splash goggles • computers • hand lenses • rulers • plastic beakers • magnets • collecting nets • notebooks • timing devices • weather instruments <ul style="list-style-type: none"> - thermometers - wind vanes - rain gauges • materials to support observations of habitats of organisms <ul style="list-style-type: none"> - terrariums - aquariums

“Including” vs. “Such as”

Statements containing the word “including” reference content that must be mastered, while those containing the phrase “such as” are intended as possible illustrative examples.

Tools being introduced for the first time are highlighted in yellow.

Source: The provisions of §§112.11-112.16 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.

Tools/Equipment

Grade 3	Grade 4	Grade 5
<ul style="list-style-type: none"> • safety equipment <ul style="list-style-type: none"> – safety goggles or chemical splash goggles – gloves • cameras • computers • hand lenses • metric rulers • Celsius thermometers • wind vanes • rain gauges • pan balances • graduated cylinders • beakers • spring scales • hot plates • meter sticks • magnets • collecting nets • notebooks • Sun, Earth, and Moon system models • timing devices • materials to support observations of habitats of organisms <ul style="list-style-type: none"> – terrariums – aquariums 	<ul style="list-style-type: none"> • safety equipment <ul style="list-style-type: none"> – safety goggles or chemical splash goggles – gloves • calculators • microscopes • cameras • computers • hand lenses • metric rulers • Celsius thermometers • mirrors • spring scales • balances • graduated cylinders • beakers • hot plates • meter sticks • magnets • collecting nets • notebooks • timing devices • materials to support observations of habitats of organisms <ul style="list-style-type: none"> – terrariums – aquariums 	<ul style="list-style-type: none"> • safety equipment <ul style="list-style-type: none"> – safety goggles or chemical splash goggles – gloves • calculators • microscopes • cameras • computers • hand lenses • metric rulers • Celsius thermometers • prisms • mirrors • balances • spring scales • graduated cylinders • beakers • hot plates • meter sticks • magnets • collecting nets • notebooks • timing devices • materials to support observations of habitats of organisms <ul style="list-style-type: none"> – terrariums – aquariums

Source: The provisions of §§112.11-112.16 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.

Tools/Equipment

Grade 6	Grade 7	Grade 8
<ul style="list-style-type: none"> • journals/notebooks • beakers • Petri dishes • meter sticks • graduated cylinders • hot plates • test tubes • balances • microscopes • thermometers • calculators • computers • timing devices • other necessary equipment to collect, record, and analyze information • preventative safety equipment <ul style="list-style-type: none"> – chemical splash goggles – aprons – goggles • emergency safety equipment <ul style="list-style-type: none"> – eye/face wash – fire blanket – fire extinguisher 	<ul style="list-style-type: none"> • life science models • hand lenses • stereoscopes • microscopes • beakers • Petri dishes • microscope slides • graduated cylinders • test tubes • meter sticks • metric rulers • metric tape measures • timing devices • hot plates • balances • thermometers • calculators • water test kits • computers • temperature and pH probes • collect nets • insect traps • globes • digital cameras • journals/notebooks • other necessary equipment to collect, record, and analyze information • preventative safety equipment <ul style="list-style-type: none"> – chemical splash goggles – aprons – goggles • emergency safety equipment <ul style="list-style-type: none"> – eye/face wash – fire blanket – fire extinguisher 	<ul style="list-style-type: none"> • lab journals/notebooks • beakers • meter sticks • graduated cylinders • anemometers • psychrometers • hot plates • test tubes • spring scales • balances • microscopes • thermometers • calculators • computers • spectrosopes • timing devices • other necessary equipment to collect, record, and analyze information • preventative safety equipment <ul style="list-style-type: none"> – chemical splash goggles – aprons – goggles • emergency safety equipment <ul style="list-style-type: none"> – eye/face wash – fire blanket – fire extinguisher

Source: The provisions of §§112.18-112.20 of this subchapter shall be implemented by school districts beginning with the 2018-2019 school year.

Tools/Equipment

Biology	Chemistry	IPC
<ul style="list-style-type: none"> • data-collecting probes • standard laboratory glassware • microscopes • various prepared slides • stereoscopes • metric rulers • balances • gel electrophoresis apparatuses • micropipettes • hand lenses • Celsius thermometers • hot plates • lab notebooks or journals • timing devices • Petri dishes • lab incubators • dissection equipment • meter sticks • models, diagrams, or samples of biological specimens or structures 	<ul style="list-style-type: none"> • safety showers • eyewash fountains • safety goggles or chemical splash goggles • fire extinguishers • graphing calculators • computers and probes • electronic balances • adequate supply of consumable chemicals • sufficient scientific glassware <ul style="list-style-type: none"> – beakers – Erlenmeyer flasks – pipettes – graduated cylinders – volumetric flasks – burettes 	<ul style="list-style-type: none"> • safety showers • eyewash fountains • safety goggles or chemical splash goggles • fire extinguishers

Source: The provisions of §§112.34, 112.35, 112.38, and 112.39 of this subchapter adopted in 2017 shall be implemented by school districts beginning with the 2018-2019 school year.

Tools/Equipment

Physics	
<ul style="list-style-type: none"> • multimeters <ul style="list-style-type: none"> – current – voltage – resistance • balances • batteries • dynamic demonstration equipment • collision apparatus • lab masses • magnets • plane mirrors • convex lenses • stopwatches • trajectory apparatus • graph paper • magnetic compasses • protractors • metric rulers • spring scales • thermometers • slinky springs • ripple tank with wave generator • wave motion rope • tuning forks • hand-held visual spectroscopes • discharge tubes with power supply (H, He, Ne, Ar) • electromagnetic spectrum charts • laser pointers 	<ul style="list-style-type: none"> • micrometer • caliper • computer • data acquisition probes • scientific calculators • graphing technology • electrostatic kits • electroscope • inclined plane • optics bench • optics kit • polarized film • prisms • pulley with table clamp • motion detectors • photogates • friction blocks • ballistic carts or equivalent • resonance tube • stroboscope • resistors • copper wire • switches • iron filings • and/or other equipment and materials that will produce the same results

Source: The provisions of §§112.34, 112.35, 112.38, and 112.39 of this subchapter adopted in 2017 shall be implemented by school districts beginning with the 2018-2019 school year.