# Stage D (Grades 3, 4, 5) ISBE Content and Processes Required by Illinois Learning Standards-Based Performance Descriptors for Science

## PROCESSES SPECIFIED IN PERFORMANCE DESCRIPTORS

*The following verbs are included in the performance descriptors. This set of charts is intended to provide information for teachers about the processes required by Illinois Learning Standards—for students to apply and to understand—at lower grade levels.*

| | | | |
|---|---|---|---|
| absorb | adapt | analyze | apply |
| associate | brainstorm | categorize | change |
| collect | communicate | compare | conduct |
| consider | construct | contrast | convert |
| create | demonstrate | describe | detect |
| determine | diagram | display | distinguish |
| document | examine | experiment | explain |
| explore | follow | formulate | function |
| generate | graph | identify | incorporate |
| ingest | inhale | interact | introduce |
| investigate | link | map | outline |
| predict | prepare | present | produce |
| propose | record | reflect | refract |
| refute | report | research | select |
| separate | sketch | suggest | summarize |
| synthesize | transmit | travel | validate |
| verify | | | |

## CONTENT REQUIRED BY PERFORMANCE DESCRIPTORS

*The following nouns are listed below the standard for which they appear in the performance descriptors. This set of charts is intended to provide information for teachers about content required by Illinois Learning Standards at lower grade levels.*

### ILS 11A: Know and apply the concepts, principles, and processes of scientific inquiry.

| | | | |
|---|---|---|---|
| accuracy | charts | contextual inquiry questions | data |
| data points | data table | data trends | dependant variable |
| discrepancies | equipment | evidence | explanations |
| hypothesis | hypothesis statement | inferences | independent variable |
| investigation hypothesis | investigatory process | logical sequence | materials |
| metric units | observation | outliers | procedural steps |
| procedure | qualitative data | quantitative data | safety measures |
| safety precautions | scientific knowledge | scientific skills | technology |
| trials | visualizations | | |

### ILS 11B: Know and apply the concepts, principles and processes of technological design.

| | | | |
|---|---|---|---|
| adaptability | applications | design dilemma | design modifications |
| design parameters | design plans | design procedures | design prototype |
| design questions | design selection | design solution | graphic display |
| heat | investigations | pendulum | processes |
| ranges | results | sources of error | success criteria |
| success criteria indicators | technological design | | |

**ILS 12A: Know and apply concepts that explain how living things function, adapt and change.**

| | | | |
|---|---|---|---|
| animals | appendages | body functions | body structures |
| characteristics | coloration | fossils | functional features |
| generalizations | generations | habit | immaturity |
| inherited characteristic | learned behavior | learned characteristic | life cycles |
| macroscopic life forms | maturity | metamorphosis variations | microscopic life forms |
| nature of inheritance | observed patterns | offspring | parents |
| pattern | patterns of change | plants | rules of probability |
| stages | structural features | structures | surveys |
| teeth | | | |

**ILS 12B: Know and apply concepts that describe how living things interact with each other and with their environment.**

| | | | |
|---|---|---|---|
| adaptations | behavioral patterns | consumer | ecosystem |
| environment | habitat | host | moisture |
| organisms | parasite | physical features | predator |
| prey | producer | relationship | seasons |
| simple food chain | simple food web | temperature | |

**ILS 12C: Know and apply concepts that describe properties of matter and energy and the interactions between them.**

| | | | |
|---|---|---|---|
| chemical combinations | chemical energy | chemical properties | common compounds |
| common elements | electrical energy | energy | heat distribution |
| heterogeneous samples | homogenous samples | interactions | interrelationships |
| light | matter | mechanical energy | physical combinations |
| physical properties | properties | requirements | resources |
| simple mixtures | sound | sources of power | |

**ILS 12D: Know and apply concepts that describe force and motion and the principles that explain them.**

| | | | |
|---|---|---|---|
| constant motion | Earth | force | friction |
| initial energy inputs | length | mass | mechanical advantage |
| moon | motion | periodic motion | planets |
| simple machines | variable motion | variations | weight |

**ILS 12E: Know and apply concepts that describe the features and process of the Earth and its resources.**

| | | | |
|---|---|---|---|
| atmospheric conditions | barometric observation | biotic communities | climate |
| climatic changes | cloud observation | effects | erosion |
| features | global climate | human activities | land |
| natural resource supplies | supplies | water | water cycle |
| weather conditions | weather patterns | weathering | |

**12F: Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.**

| | | | |
|---|---|---|---|
| benefits | categories of stars | celestial objects | composition |
| constellations | cycles | distance | moon |
| paths | phases | planetary objects | planetary orbits |
| position | risks | sky | solar system |
| solar system cycles | space | space flights | space research advances |
| stars | universe | | |

**ILS 13A: Know and apply the accepted practices of science.**

| | | | |
|---|---|---|---|
| accidents | assumptions | chemicals | clean-up |
| collections | creative thinking | critical thinking | inquiry |
| laws | practices | predictions | preparation |
| safety | scientific equipment | steps | theories |
| tools | | | |

**ILS 13B: Know and apply concepts that describe the interaction between science, technology and society.**

| | | | |
|---|---|---|---|
| data collection | data retrieval | data storage | impact |
| microscopy | phenomenon | physical environmental settings | radar |
| scientists | technology innovations | | |