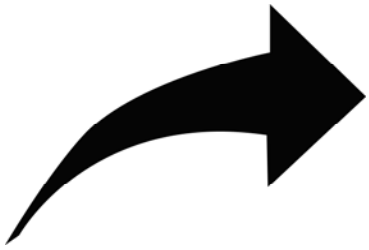
ISAT Essentials



Core Priorities for Grade 7

Center for Urban Education
http://teacher.depaul.edu

This guide includes test specifications from ISBE. Those specifications and additional ISAT preparation materials are available at isbe.net.

7th Grade READING

Vocabulary Challenges—Determine word meaning—context, structure, base word

Vocabulary Questions—Stems based on ISAT samples

- *Which word means the same as ____ in these sentences?*
- *What is the root word of _____?*
- *What is a synonym for ___?*
- *What is an antonym for ___?*
- *How does the prefix affect this word?*
- *What is the etymology of ___?*
- *Based on the etymology of the word xxxx, which of these is the best meaning of the word xxxx in this sentence?*

Interpret Poems
Challenging Questions Based on ISAT Samples

Develop poetry interpretation skills:

- *If you did not know the meaning of ___ in stanza N, you should ____.*
- *In line n, when the speaker says …, she most likely means _____.*
- *In this poem, which point of view does the poet use?*
- *The poet most likely took the idea for this poem from ___.*
- *Why does the speaker feel ___?*

Fiction

Analyze questions—what kind of question is it; how do I answer it?

❑*Infer meaning of word from context*
❑*Infer cause-effect, motive, predictions*
❑*Point of view*
❑*Summarize*
❑*Infer the Theme of a story or fable*
❑*Analyze: genre; compare/contrast*
❑*Infer: character traits, setting, plot, motive, prediction, main idea/theme, meaning of word from context*
❑*Evaluate: author's techniques*

Challenging Questions Based on ISAT Samples

- *According to this sentence, which best describes the feelings of ____?*
- *How are x and y alike? How do they differ?*
- *In paragraph n, which literacy device does the author use?*
- *Summarize the passage in a few sentences.*
- *What do you predict will happen after ___?*
- *What does ____ (give word) mean as used in this sentence?*
- *What does the title of the passage suggest?*
- *What is ____'s motive?*
- *What is the genre?*
- *What is the main purpose of the first paragraph?*
- *What is the point of view of the narrator?*
- *What is the theme?*
- *What is the writer's purpose?*
- *What techniques does the writer use to create a mood?*
- *What techniques does the writer use to interest the reader?*
- *Which detail in the selection shows that ____?*
- *Which of these best describes ___?*
- *Which sentence best summarizes the passage?*
- *Which term best defines this passage?*
- *Which word means the same as ____ in these sentences?*
- *Why did X do Y?*
- *What would be another good title for ___?*

Extended Response Examples from ISAT samples

- *What challenges did _____ face, and what could people learn from how they overcame these challenges? Use information from the passage and your own ideas and conclusions to support your answer.*
- *In the story, the author describes the behavior of X. Explain why X behaves as they do in this story. Use information from the story and your own observations and conclusions to support your answer.*
- *What lesson can people learn from this story?*

Non-Fiction

Analyze questions and answers—how do I choose the most important information; how do I choose the best answer?

❑*Identify fact/opinion*
❑*Summarize—evaluate the information and decide what is important*
❑*Identify the Main Idea and evaluate the importance of information to support it*
❑*Analyze: compare/contrast; fact/opinion*
❑*Infer meaning of word from context.*
❑*Structure/organization of the passage*

Challenging Questions Based on ISAT Samples

- *Based on the etymology of the word xxxx, which of these is the best meaning of the word xxxx in this sentence?*
- *How do the headings help the reader?*
- *How does the writer organize the passage?*
- *In _____, the heading _____ refers to ----.*
- *Paragraph N of this selection is mainly about ___*
- *To understand more about the meaning of ___, the reader should ask _____?*
- *What does ____ (give word) mean as used in this sentence?*
- *What genre is X?*
- *What is a synonym for ___ as used in the passage?*
- *What is an opinion in the passage?*
- *What is the main idea of paragraph n?*
- *What is the main idea of the passage?*
- *What is the main purpose of the first paragraph?*
- *What is the writer's purpose?*
- *What would be another good title for ___?*
- *Which detail in the selection shows that ____?*
- *Which information supports that main idea?*
- *Which of these statements is a main idea of ___?*
- *Which statement best summarizes the article?*
- *Which term best defines this passage?*
- *Which word means the same as ____ in these sentences?*

Extended Response Examples from ISAT samples

- *What challenges did _____ face, and what could people learn from how they overcame these challenges? Use information from the passage and your own ideas and conclusions to support your answer.*
- *What conclusions can someone draw about _____ based on this passage?*

SEVENTH GRADE MATH PRIORITIES

Priorities identified through the ISBE ISAT online resources and CPS Learning Targets
http://www.chicagoteachingandlearning.org/component/content/article/235-learning-targets.html

Problem Solving

Students need to be able to…

❑ solve problems in each of these areas of math.	❑ Use probability in problem-solving situations
❑ Make predictions	❑ Use ratios to describe problem situations
❑ show the steps they take	❑ justify a concept or relationship
❑ explain the reasons for their choices of strategies.	

Math Content	**Examples of Questions from ISAT Sample**
number sense and operations ❑ absolute value ❑ approximation ❑ commutative ❑ distributive ❑ equivalent representation of numbers ❑ estimate ❑ factors ❑ formula ❑ greatest common factor ❑ number systems ❑ order of operations ❑ properties ❑ proportional reasoning ❑ square ❑ square root	• Several students bought pencils to share equally. How many pencils did they buy? • Mike has 2 red apples and 3 green in his bag. He takes 2 apples. What is the probability that he takes 2 red? • Toby divides 12.9 by 8.6. His answer is 1.5 How can he check his answer? • Jo needs an 85% average on her five math tests. She earned xx, xx, xx and xx on her first four tests. What score must she earn on her fifth test to have an average of exactly 85% for all five tests?

Math Content	**Examples of Questions from ISAT Sample**
algebra *Represent, translate, and interpret relationships between equations and/or inequalities and graphs in the coordinate plane.* ❑ Additive identity property ❑ Additive inverse property ❑ Associative property ❑ Balance ❑ Compound inequality ❑ Equations ❑ exponent ❑ expressions ❑ function ❑ inequalities ❑ inverse relations ❑ linear equation ❑ permutation ❑ prime factorization ❑ rational number ❑ scientific notation ❑ table of values ❑ variable **Algebraic Thinking** Represent, simplify, and solve mathematical relationships and situations with expressions, equations, and inequalities.	• There are 18 girls in a class. The ratio of girls to boys in the class is 3 to 2. How many boys are in the class? • Which is equal to 3x + 5 + x + 10 + 2y? • Which inequality represents the graph? • What value of x makes the inequality true? • A cheese pizza costs $6. Each topping costs $.85. Which gives the cost of a cheese pizza with t toppings? • Jen uses two steps to multiply 7(52). What property is she using? • Which is equal to 5(2a + 9)

Math Content	**Examples of Questions from ISAT Sample**
geometry and measurement ❑ angles ❑ area ❑ area ❑ capacity/volume ❑ Celsius, Fahrenheit ❑ complementary angles ❑ conversion ❑ coordinate system ❑ cube ❑ estimate ❑ height ❑ isosceles trapezoid ❑ length ❑ line segment ❑ mass/weight ❑ perimeter ❑ pyramid (regular) ❑ rectangular prism ❑ rectangular pyramid ❑ right cylinder ❑ scale ❑ scale ❑ square prism ❑ surface area ❑ three dimensional ❑ transformations ❑ trapezoid ❑ triangular prism	• Use your ruler to help you answer this question. What is the perimeter of triangle PQR? • What is the area of the polygon? What is the area of the square in square feet? • What is the surface of this rectangular prism? • Points M, N, Q, Z and X are all on circle P. Which represents the diameter? • The dimensions of rectangle N are ½ of rectangle M. Which must be true of the two angles? • Triangle PQT is similar to triangle PRS. What is the length of SR?
data analysis and probability ❑ chart ❑ circle graph ❑ graph ❑ line graph ❑ line plot ❑ mean/average ❑ median ❑ mode ❑ pattern ❑ predict ❑ probability ❑ range ❑ table ❑ tally, tally chart ❑ Venn diagram	• The table shows the pattern between the number of ___ and the number of ___. Which can be used to find the number of ___ needed for n ____? • Which point is at (3, -2) • Points K, L, and M are vertices on rectangle KLMN. What are the coordinates of vertex N? • A restaurant has 5 different hamburgers and 4 different drinks. How many combinations are possible? • Which set of bars represents the data in the circle graph? • Which graph shows a line of best fit?

7th GRADE ESSENTIAL SCIENCE CONTENT

Based on the Illinois Learning Standards and ISAT Samples and Specifications

SCIENCE IS THINKING:

- ❑ *inquiry*
- ❑ *data Analysis*
- ❑ *forming a hypothesis*
- ❑ *observation*
- ❑ *measurement*
- ❑ *evaluating an outcome*

Biology, Genetics, and Reproduction

❑ *amoeba*	❑ *bacteria*
❑ *bio (prefix)*	❑ *carnivorous*
❑ *carnivore*	❑ *cell*
❑ *classification*	❑ *disease*
❑ *dominant*	❑ *euglena*
❑ *flagellum*	❑ *heredity*
❑ *meiosis*	❑ *mitosis*
❑ *omnivore*	❑ *organism*
❑ *osmosis*	❑ *population*
❑ *recessive*	❑ *reproduction*
❑ *relate*	❑

Botany

- ❑ *carbon dioxide*
- ❑ *classification*
- ❑ *efficient*
- ❑ *food chain*
- ❑ *herb*
- ❑ *herbivore*
- ❑ *osmosis*
- ❑ *oxygen*
- ❑ *palmate*
- ❑ *solar energy*
- ❑ *structure*

Matter and Energy

❑ *acids*	❑ *bases*
❑ *buoyancy*	❑ *chemical energy*
❑ *compound*	❑ *electricity*
❑ *diffuse*	❑ *diffraction*
❑ *energy*	❑ *friction*
❑ *heat*	❑ *light*
❑ *light waves*	❑ *magnetism*
❑ *property*	❑ *reflection*
❑ *refract*	❑ *solution*
❑ *substance*	❑

The Earth's Structure and Processes, including ecosystems

❑ *biodegradable*	❑ *condensation*
❑ *consume*	❑ *climate*
❑ *crust*	❑ *distribution*
❑ *ecosystem*	❑ *erode*
❑ *food web*	❑ *fossil*
❑ *habitat*	❑ *igneous*
❑ *layer*	❑ *metamorphic*
❑ *parasite*	❑ *rock cycle*
❑ *sedimentary*	❑ *water cycle*

ASTRONOMY

❑ *air mass*	❑ *atmosphere*
❑ *constellation*	❑ *gravity*
❑ *hemisphere*	❑ *mass*
❑ *orbit*	❑ *planets*
❑ *rotation*	❑ *solar system*
❑ *star*	❑ *weight*

Science, Technology, Society, and Safety

❑ *average*	❑ *biodegradable*
❑ *conclusion*	❑ *estimate*
❑ *experiment*	❑ *investigate*
❑ *measure*	❑ *rate*
❑ *recycle*	❑ *research*
❑ *strategy*	❑ *visual observation*

7th Grade Science Priorities and ISAT Questions

SCIENCE CONTENT	ISAT sample questions
Biology and Genetics ❑*observe, measure (distances)* ❑*analyze* ❑*read* ❑*measure and report data* ❑*interpret data table or graph* ❑*make glossary* ❑ *write summary.*	• These graphs show the rate at which four different disease-producing bacteria grow. Which bacterium would produce a disease in the shortest amount of time? • What is the function of the flagellum? • An amoeba divides into two identical daughter cells. They have exactly the same characteristics as the parent amoeba. Which best describes the amoeba's division? • This is a diagram of a genetic cross. In guinea pigs, black hair color is dominant (B) and white hair color is recessive (b). What hair color are the guinea pigs' offspring? • DNA testing is important in …
Astronomy ❑*observe, measure* ❑*analyze* ❑ *read.* ❑*interpret data table or graph* ❑ *make glossary* ❑*write summary.*	• What does the color of a star indicate? • Why are different constellations of stars seen during different seasons? • As seen from Earth, at which position would the moon appear to be full? • In Illinois, the constellation Orion can be seen in the night sky in winter. Why can this constellation not be seen in the summer? • At which position in Earth's orbit are daytime and nighttime equal?
Matter ❑*observe, analyze* ❑*read* ❑*interpret data table or graph* ❑*make glossary* ❑*write summary*	• If the volume of the rock immersed in the graduated cylinder is 60 mL, what will the level of the water be after the rock is removed? • You need to put a metal rod into a hole in a metal cylinder. It is too tight. Which would be the best strategy to make the rod fit? • Which is the best method for a student to identify a solution • as an acid or a base?
Earth's Structure and Processes and Astronomy ❑*observe, analyze* ❑*read* ❑*interpret data table or graph* ❑*make glossary* ❑*write summary*	• The graph shows how the number of radioactive nuclei in an isotope decreases over time. How many days did it take for half of the nuclei to decay? • If these four identical balls are dropped at the same time and from the same height, which ball will land first? • An object is weighed at point A and carried up to point B and weighed again. Why does the object weigh less at point B? • Which of these parts of an animal would be most likely to form a fossil? • Which rock layer is probably the oldest? • A red ball weighs more than a blue ball. This requires that… • What type of rock is formed in layers? • Wind occurs when air masses move from one place to another. What causes the movement of air masses? • Erosion occurs at …

SCIENCE CONTENT	ISAT sample questions
Energy, Electricity, Light, Magnetism ❑*observe, analyze* ❑*read.* ❑*interpret data table or graph* ❑*make glossary* ❑*write summary*	• What property of light waves can be observed as light waves pass from one medium to another and change speed? • Most of the chemical energy of the gasoline burned in a car is not used to move the car but is changed into… • Applying the brakes on this bicycle causes it to slow down • because the brakes — • Which pole arrangement of the four magnets will hold the cabinet door shut most tightly when it is closed?
Environment and Botany ❑*observe, analyze* ❑*read.* ❑*interpret data table or graph* ❑*make glossary* ❑*write summary*	How much more rain fell in February than in November? • An experiment was conducted to determine the feeding rate at which two different water beetles eat frog eggs. The data are shown in the following graph. How many frog eggs did Beetle B eat in the first 4 minutes? • What is the name of this plant? • In a food chain, which are the most efficient users of solar energy? • Why were these animals placed into these groups? • Green plants are important to animals because the plants… • Snakes feed on mice. The mice eat grain crops. When the crops are plentiful, what will happen? • If foxes and hawks are removed from this food web, one result will be — • Green plants are important to animals because the plants… • Which best describes the characteristics of this leaf? • According to the soil profile, in which layer are most of the • soil's nutrients most likely found?
ISAT SCIENCE STRATEGIES— *How to succeed on the test: Inquiry, Data Analysis, Measurement, Evaluation, Content* *Science and technology* *SCIENCE RE-VIEW: students do three-minute presentations on core science they have learned.*	• A student wants to perform an experiment to test how much water bean plants need for good growth. Which factor should be changed? • Which statement is a direct visual observation? • Two companies make golf balls, and each claims that its ball goes farther. Which would provide the *best* scientific evidence to help determine which ball goes farther? • When modern disease-controlling medicines and practices • are introduced in developing countries, the first major change is that… • Karen just bought a new battery for her car. What should she do with the old battery? • New studies on a drug that regulates blood pressure show that it can cause harmful side effects if used for many years. What should the manufacturer do?