



EOC  
Biology



# STAAR GUIDE

*to Success*

SAMPLE

Everything you need to know about

**STAAR**

All at your fingertips!

- STAAR Rigor and Depth of Knowledge (DOK)
- Assessed Standards with DOK Levels
- DOK Question Stems, Sentence Frames, Activities, etc.
- DOK and Bloom's Taxonomy Alignment
- English Language Proficiency Standards
- Information on All STAAR Assessment Versions
- ELL Accommodations for Each Assessment
- ***And Much More!***



## STAAR's Increased Rigor

### FOCUS

#### DESIGN ATTRIBUTES

- A distinction has been made between “readiness” and “supporting” standards from the TEKS content standards eligible for assessment.
- A set of readiness standards has been identified for each subject and grade or course drawn from the TEKS content standards eligible for assessment.
- Readiness standards will be emphasized annually in the STAAR assessments.

#### READINESS STANDARDS

- They are essential for success in the current grade or course.
- They are important for preparedness for the next grade or course.
- They support college and career readiness.
- They necessitate in-depth instruction.
- They address broad and deep ideas.

#### SUPPORTING STANDARDS

- Although introduced in the current grade or course, they may be emphasized in a subsequent year.
- Although reinforced in the current grade or course, they may be emphasized in a previous year.
- They play a role in preparing students for the next grade or course but not a central role.
- They address more narrowly defined ideas.

### CLARITY

#### DESIGN ATTRIBUTES

- Assessments focus is on readiness standards and course-specific content standards.
- The majority of the assessments will test content studied that year.
- In reading, emphasis will be given to critical analysis than literal understanding.

### DEPTH

#### DESIGN ATTRIBUTES

- Includes a greater number of items that have a higher cognitive complexity level.
- Items will more closely match the cognitive complexity level evident in the TEKS.
- In writing, students will be required to write two essays rather than one. The writing prompts will support analytical, persuasive, and expository writing in addition to literary writing.
- In social studies, science, and mathematics, process skills will be assessed in context, not in isolation, which will allow for a more integrated and authentic assessment of these content areas.
- In science and mathematics, the number of open-ended (griddable) items will increase to allow students more opportunity to derive an answer independently.

# Biology Readiness and Supporting Standards

## Readiness Standards

## Supporting Standards

**Reporting Category 1:** Cell Structure and Function. Student will demonstrate an understanding of biomolecules as building blocks of cells, and that cells are the basic unit of structure and function of living things.

- 4.B investigate and explain cellular processes, including homeostasis, energy conversions, transport of molecules, and synthesis of new molecules; **DOK 2**
- 4.C compare the structures of viruses to cells, describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza. **DOK 2**
- 5.A describe the stages of the cell cycle, including deoxyribonucleic acid (DNA) replication and mitosis, and the importance of the cell cycle to the growth of organisms; **DOK 2**
- 9.A compare the structures and functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids; **DOK 2**

- 4.A compare and contrast prokaryotic and eukaryotic cells; **DOK 2**
- 5.B examine specialized cells, including roots, stems, and leaves of plants; and animal cells such as blood, muscle, and epithelium; **DOK 1**
- 5.C describe the roles of DNA, ribonucleic acid (RNA), and environmental factors in cell differentiation; **DOK 2**
- 5.D recognize that disruptions of the cell cycle lead to diseases such as cancer. **DOK 2**
- 9.D analyze and evaluate the evidence regarding formation of simple organic molecules and their organization into long complex molecules having information such as the DNA molecule for self-replicating life. **DOK 3**

**Reporting Category 2:** Mechanisms of Genetics. Student will demonstrate an understanding of the mechanisms of genetics.

- 6.A identify components of DNA, and describe how information for specifying the traits of an organism is carried in the DNA; **DOK 2**
- 6.E identify and illustrate changes in DNA and evaluate the significance of these changes; **DOK 2**
- 6.F predict possible outcomes of various genetic combinations such as monohybrid crosses, dihybrid crosses and non-Mendelian inheritance; **DOK 2**

- 6.B recognize that the components that make up the genetic code are common to all organisms; **DOK 1**
- 6.C explain the purpose and process of transcription and translation using models of DNA and RNA; **DOK 2**
- 6.D recognize that gene expression is a regulated process; **DOK 1**
- 6.G recognize the significance of meiosis to sexual reproduction; **DOK 1**
- 6.H describe how techniques such as DNA fingerprinting, genetic modifications, and chromosomal analysis are used to study the genomes of organisms. **DOK 2**

**Reporting Category 3:** Biological Evolution and Classification. Student will demonstrate an understanding of the theory of biological evolution and the hierarchical classification of organisms.

- 7.A analyze and evaluate how evidence of common ancestry among groups is provided by the fossil record, biogeography, and homologies, including anatomical, molecular, and developmental; **DOK 2**
- 7.E analyze and evaluate the relationship of natural selection to adaptation and to the development of diversity in and among species; **DOK 2**
- 8.B categorize organisms using a hierarchical classification system based on similarities and differences shared among groups; **DOK 2**

- 7.B analyze and evaluate scientific explanations concerning any data of sudden appearance, stasis, and sequential nature of groups in the fossil record; **DOK 2**
- 7.C analyze and evaluate how natural selection produces change in populations, not individuals; **DOK 2**
- 7.D analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success; **DOK 2**
- 7.F analyze and evaluate the effects of other evolutionary mechanisms, including genetic drift, gene flow, mutation, and recombination; **DOK 2**
- 7.G analyze and evaluate scientific explanations concerning the complexity of the cell. **DOK 2**
- 8.A define taxonomy and recognize the importance of a standardized taxonomic system to the scientific community; **DOK 2**
- 8.C compare characteristics of taxonomic groups, including archaea, bacteria, protists, fungi, plants, and animals. **DOK 2**

**Reporting Category 4:** Biological Processes and Systems. Student will demonstrate an understanding of metabolic processes, energy conversions, and interactions and functions of systems in organisms.

- 10.A describe the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals; **DOK 2**
- 10.B describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in plants; **DOK 2**

- 9.B compare the reactants and products of photosynthesis and cellular respiration in terms of energy and matter; **DOK 2**
- 9.C identify and investigate the role of enzymes. **DOK 2**
- 10.C analyze the levels of organization in biological systems and relate the levels to each other and to the whole system. **DOK 2**
- 11.A describe the role of internal feedback mechanisms in the maintenance of homeostasis. **DOK 2**

## Depth of Knowledge (DOK) Level 1

Level 1 tasks involve comprehension and application at a surface level which do not require any further mental manipulation or processing of the information beyond recall or reproduction. There is little transformation or extended processing of the target knowledge required. Evaluation at this level would require recall or recognition of a fact, information, concept, or procedure.

### Key Characteristics

- Basic recall of facts, vocabulary, and attributes of objects
- Application of simple procedures or formulas
- Common tasks include listing, identifying, and defining

### Student Roles

Memorizes	Interprets	Responds
Describes	Restates	Demonstrates
Explains	Remembers	Recognizes

### Question Stems for Teachers

- Can you recall \_\_\_\_?
- When did \_\_\_\_ happen?
- Who was \_\_\_\_?
- How can you recognize \_\_\_\_?
- What is \_\_\_\_?
- How can you find the meaning of \_\_\_\_?
- How would you write \_\_\_\_?
- What might you include on a list about \_\_\_\_?
- Can you identify \_\_\_\_?
- How would you describe \_\_\_\_?

### Sentence Frames for Students

- \_\_\_\_ is when \_\_\_\_.
- \_\_\_\_ happened because \_\_\_\_.
- \_\_\_\_ was the person/character that \_\_\_\_.
- I recognize \_\_\_\_ by looking at/thinking about \_\_\_\_.
- \_\_\_\_ means \_\_\_\_.
- I can find the meaning of \_\_\_\_ by \_\_\_\_.
- I would write \_\_\_\_ like this \_\_\_\_.
- I would include \_\_\_\_ because \_\_\_\_.
- \_\_\_\_ has \_\_\_\_ and \_\_\_\_.
- \_\_\_\_ looks/feels/smells/sounds/tastes like \_\_\_\_.

### Possible Products

Quiz	Example	Definition
Podcast	Commenting	Collection
Wiki	Explanation	Label
Fact Highlights	Show and Tell	Categorize

### Activities Across Bloom's Taxonomy

#### Reading

- |            |   |
|------------|---|
| Remember   | Recite a fact related to . . .                                |
| Understand | Paraphrase a chapter in the book.                             |
| Apply      | Prepare a flow chart that illustrates the sequence of events. |
| Analyze    | Identify missing points in outline.                           |
| Evaluate   | Recommend a book and justify recommendation.                  |
| Create     | Modify the ending of the story.                               |

#### Math

- |            |   |
|------------|---|
| Remember   | Recognize a property.                                   |
| Understand | Outline main points.                                    |
| Apply      | Use basic calculation tasks to solve one step problems. |
| Analyze    | Identify missing points in formula.                     |
| Evaluate   | Justify process of using formula.                       |
| Create     | Make a chart showing how to solve a given problem.      |

#### Science

- |            |   |
|------------|---|
| Remember   | Recall scientific steps in a process.               |
| Understand | Illustrate a relationship between . . .             |
| Apply      | Follow simple instructions to complete a lab.       |
| Analyze    | Retrieve information from an illustration or chart. |
| Evaluate   | Review peer description of topic for accuracy.      |
| Create     | Brainstorm ideas related to . . .                   |

# Biology Academic Vocabulary

## Biology

### RC1- CELL STRUCTURE AND FUNCTION

analyze ☆	analizar
animal cells ☆	células animales
basic structures ☆	estructuras básicas
basic unit	unidad básica
biomolecules ☆	biomoléculas
blood	sangre
cancer ☆	cáncer
carbohydrates ☆	carbohidratos
cell cycle ⚙	ciclo de la célula
cell differentiation ☆	diferenciación de la célula
cell structure ☆	estructura de la célula
cells ⚙☆☆	células
cellular processes ☆	procesos celulares
compare ☆	comparar
compare and contrast ☆	comparar y contrastar
demonstrate ☆	demostrar
deoxyribonucleic acid (DNA)	ácido desoxirribonucleico (ADN)
describe ⚙☆	describir
different ☆	diferente
disease ⚙	enfermedad
disruption	interrupción
DNA molecule	molécula de ADN
energy conversions ☆	conversiones de energía
environmental factors	factores ambientales
epithelium ☆	epitelio
eukaryotic cells	célula eucariota
evaluate ☆	evaluar
evidence ☆	evidencia
examine ☆	examinar
explain ☆	explicar
formation ☆	formación
function ⚙	funcionar
growth	crecimiento
homeostasis ☆	homeostasis
human immunodeficiency virus (HIV)	virus de inmunodeficiencia humana
influenza ☆	influenza
information ☆	información
investigate ☆	investigar
leaves ★	hojas
lipids ☆	lípidos
living organism	organismos vivos

living things	los seres vivos
long complex molecules	moléculas complejas largas
metabolic processes ☆	proceso de metabolismo
mitosis ☆	mitosis
molecules ☆	moléculas
muscle ☆	músculo
nucleic acids ☆	ácido nucleico
organic molecule ☆	molécula orgánica
organism ☆	organismo
organization ★☆☆	organización
plants ★☆☆	plantas
prokaryotic cells ☆	células procariota
protein ☆	proteína
recognize	reconocer
replication ★	repetición
reproduction ☆	reproducción
ribonucleic acid (RNA) ☆	ácido ribonucleico
role ★☆☆	rol
roots ★	raíces
science concepts ☆	conceptos científicos
self-replicating life	vida auto-replicable
significance ☆	significativo
simple ☆	sencillo
specialized cells ☆	células especializadas
specialized parts ☆	partes especializadas
specific functions ☆	funciones específicas
stages ★	etapas
stems	tallos
structures ⚙☆☆	estructuras
synthesis ☆	síntesis
transport ☆	transportar
understanding	entender
various molecules	diferentes moléculas
viral ★☆☆	viral
virus ⚙☆☆	virus

### RC2- MECHANISMS OF GENETICS

chromosomal analysis ☆	análisis cromosómico
common ☆	común
component ☆	componente
concepts ☆	conceptos
demonstrate ☆	demostrar
describe ☆	describir

⚙ High-frequency (appears more than 3 times)   ★ Multiple-meaning   ☆ Cognate