

ISTAR Grade 10 Science Performance Level Descriptors (PLDs)

Developing Proficiency	Meeting Proficiency	Exceeding Proficiency
<p>A student performing at a Developing Proficiency level demonstrates emerging skills in introductory science concepts and terms. He/she is able to:</p>	<p>A student performing at a Meeting Proficiency level demonstrates proficient skills in basic science concepts and terms. He/she has all of the knowledge and skills shown under Developing Proficiency and is also able to:</p>	<p>A student performing at an Exceeding Proficiency level demonstrates exemplary skills in applying science concepts and terms. He/she has all of the knowledge and skills shown under Developing Proficiency and Meeting Proficiency and is also able to:</p>
<p>Cellular Chemistry:</p> <ul style="list-style-type: none"> identify some chemicals that occur in nature. 	<p>Cellular Chemistry:</p> <ul style="list-style-type: none"> express that living organisms are made up of chemical elements. 	<p>Cellular Chemistry:</p> <ul style="list-style-type: none"> identify common chemicals found in living organisms.
<p>Cellular Structure:</p> <ul style="list-style-type: none"> express that all living things are made of cells. 	<p>Cellular Structure:</p> <ul style="list-style-type: none"> express that cells exist, even though they are often very small and impossible to see with the naked eye. 	<p>Cellular Structure:</p> <ul style="list-style-type: none"> identify a eukaryotic cell when a picture/diagram is given. identify the large organelle in the middle of a eukaryotic cell as the nucleus when a picture/diagram is given.
<p>Matter Cycles and Energy Transfer:</p> <ul style="list-style-type: none"> identify that living things require energy to survive. 	<p>Matter Cycles and Energy Transfer:</p> <ul style="list-style-type: none"> describe that living things must take in substances to create the energy necessary for survival. 	<p>Matter Cycles and Energy Transfer:</p> <ul style="list-style-type: none"> describe that animals take in food and convert the food to energy. describe that plants take in sunlight, water and minerals to make their own food, which they convert into energy.
<p>Interdependence:</p> <ul style="list-style-type: none"> identify some important resources used by living things in a given ecosystem when a picture/diagram of the ecosystem is given. identify that natural disasters occur sometimes. 	<p>Interdependence:</p> <ul style="list-style-type: none"> explain that an organism cannot survive in an environment where any or all of the resources it needs are not available. describe that human behaviors can change an ecosystem. identify at least one way human behavior can cause a change to the ecosystem that is harmful for other living things. 	<p>Interdependence:</p> <ul style="list-style-type: none"> predict in which ecosystem a given resource will last the longest/shortest time given an appropriate scenario. explain why an animal is leaving/has left a particular area based on the resources available in that area. identify more than one way human behavior can cause a change to the ecosystem that is harmful for other living things. identify at least one way humans can change their behavior to help preserve the ecosystem for other living things. explain how a particular change caused by human behavior will affect other living things in an ecosystem.
<p>Molecular Basis of Heredity:</p> <ul style="list-style-type: none"> express that genes exist. 	<p>Molecular Basis of Heredity:</p> <ul style="list-style-type: none"> describe that genes are passed from parents to offspring. 	<p>Molecular Basis of Heredity:</p> <ul style="list-style-type: none"> describe that genes cause living things to have particular traits/characteristics that are unique even within a species.

<p>Cellular Reproduction:</p> <ul style="list-style-type: none"> • express that cells can divide. 	<p>Cellular Reproduction:</p> <ul style="list-style-type: none"> • describe that organisms grow due to cell division. • explain that the more cell division occurs, the more growth for the organism. 	<p>Cellular Reproduction:</p> <ul style="list-style-type: none"> • identify the parent cell as the original cell that divided into two smaller cells when cell division occurred.
<p>Genetics:</p> <ul style="list-style-type: none"> • identify different groups of living things based on their general characteristics. 	<p>Genetics:</p> <ul style="list-style-type: none"> • describe that living things have physical differences even within a species and physical similarities even when not within the same species. 	<p>Genetics:</p> <ul style="list-style-type: none"> • explain that offspring will often share characteristics with their parents because those characteristics have been passed down to them from their parents.
<p>Evolution:</p> <ul style="list-style-type: none"> • identify that organisms live in different ecosystems throughout Earth. • select the environment to which a particular organism is most well-suited given a picture/diagram of the organism and its physical traits. 	<p>Evolution:</p> <ul style="list-style-type: none"> • describe that living things have traits that allow them to survive in particular environments. • identify at least one trait of an organism that helps that organism to survive in its environment. 	<p>Evolution:</p> <ul style="list-style-type: none"> • describe the appropriate environment given a description or picture of the organism and its physical traits. • explain why a particular organism can survive better in a given environment than in other environments.
<p>The Nature of Science:</p> <ul style="list-style-type: none"> • describe that science involves experiments and observations. • use one source of information to develop an answer to a scientific question. • identify a correct scientific tool that would be used to take a particular measurement during a given investigation. 	<p>The Nature of Science:</p> <ul style="list-style-type: none"> • explain that science involves validation of hypotheses and experiments performed by others and oneself. • identify whether a scientist is observing, experimenting or validating in a given scenario. • use two sources of information to develop an answer to a scientific question. • identify all the scientific tools needed to take each measurement necessary during a given investigation. 	<p>The Nature of Science:</p> <ul style="list-style-type: none"> • explain that the outcomes of experiments must change an understanding of how something works if the experiments do not prove the original hypothesis. • identify when a hypothesis must be changed because the outcome of the experiment proves that the hypothesis is false/incorrect. • use three or more sources of information to develop an answer to a scientific question. • disregard sources of information that are irrelevant to developing the answer to a given scientific question. • use each of the tools necessary to take all appropriate measurements during a given investigation.