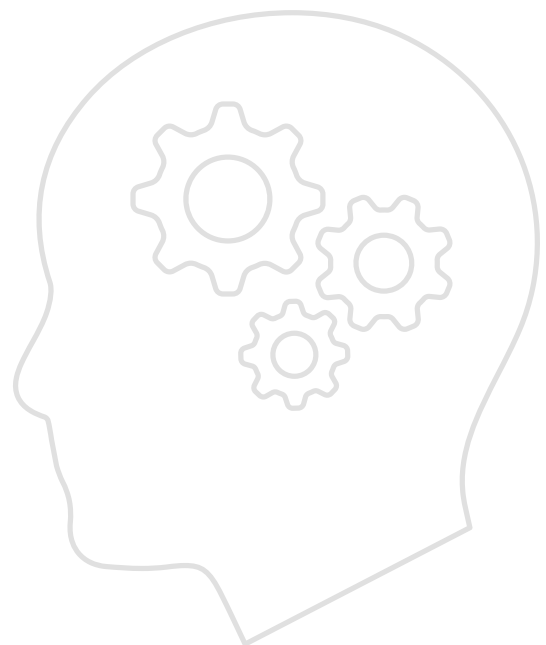


PAT Critical Reasoning

Achievement band descriptions



Background

The *PAT Critical Reasoning* construct focuses on reasoning skills rather than any specific content knowledge. These skills are grouped into three strands. The strands identify core competencies at the heart of critical reasoning. As general competencies, they contribute to growth in student learning across a range of disciplines.

There are three strands used in *PAT Critical Reasoning*:

- Conceptual reasoning
- Basic logic
- Argument analysis

Progression in the *PAT Critical Reasoning* strands is reflected by the achievement band descriptions provided in this document.

Conceptual reasoning

Conceptual reasoning is a foundational skill in which students identify the logical implications of concepts both in familiar and in more technical contexts. At the most basic level, these skills are demonstrated when students can identify the most appropriate way to represent explicitly defined concepts in diagrammatic form. As students develop this skill, they are able to apply it by identifying whether particular statements instantiate a more abstract concept and by identifying the implications of more technical, though still explicitly defined, concepts. At higher levels, students can identify the hierarchical and temporal order implied by a set of concepts relating to a process.

Basic logic

Basic logic involves the application of logical rules to a scenario or argument. This includes identifying whether simple arguments satisfy the conditions for logical validity and identifying whether a given design or scenario complies with an explicitly stated set of rules. As students develop their basic logic skills they are able to identify whether a given conclusion is supported by evidence given in the form of a graph or other representation. As students develop these skills, they are increasingly equipped to apply them to complex real-life arguments.

Argument analysis

Argument analysis builds on basic logic skills, by applying them to complex arguments that more closely approximate arguments that might be encountered in the classroom or in public debate. They are able to identify whether given reasons support or challenge a given conclusion in increasingly technical contexts. They are able to identify any unstated assumptions presupposed by an argument. As their skills develop, they are able to identify the relationships between a set of propositions and a given conclusion. Some items within this strand require the student to identify how a given statement or set of statements fits into a given argument. In doing so, students demonstrate their understanding of the logical relationships between the different components of an argument; reasons, evidence, rebuttals and counter-rebuttals.

PAT Critical Reasoning achievement band descriptions

Achievement band 130 and above

Students can identify logical relationships implied in a set of definitions where there is some degree of challenge (eg where the implications are subtle or the relationship between ideas is indirect). They identify logical relationships between claims made in an argument where there are complexities.

Achievement band 120–129

Students can summarise an explicitly stated logical sequence where there are some complexities (eg a brief but unfamiliar sequence). They identify the degree to which a claim is logically supported by data presented in a complex graphical representation, as well as the degree to which claims are supported by given evidence where there are minor complexities (eg an implied idea). They identify the logical relationships between claims made in an argument with a familiar context.

Achievement band 110–119

Students identify the relationship between explicitly defined concepts when this is straightforward. They evaluate the logical status of claims made in a simple argument. They identify whether a statement supports or challenges a proposition in a familiar context.

Achievement band 109 and below

Students summarise the relationship between ideas expressed in simple visuals. They apply a clear and explicit definition to particular, familiar cases. They recognise whether simple patterns conform to a set of explicit rules.