

MYP2 Biology: Adaptation

Statement of inquiry: Relationships between an organism's **form** and **function** allow it to **adapt** to its environment.

Debatable question: “Which type of **adaptation** gives organisms the greatest survival advantage in the era of rapid climate change?”

Objectives	Criterion A: Knowing and Understanding i. Outline structural, behavioral, and physiological adaptations. iii. Interpret information to make scientifically supported judgments: how different types of adaptation improve an animal's survival in a particular environment.
Concepts	Relationships, form, function, adaptation (structural, behavioral, physiological)
ATL Skill	Critical Thinking - Consider ideas from multiple perspectives
Resources and Preparation	1. Clone the Kialo discussion: “ <i>Which type of adaptation gives organisms the greatest survival advantage in the era of rapid climate change?</i> ” 2. Create small groups and assign each group a different biome for the activity. 3. Upload/print habitat photos or use the presentation. 4. For differentiation, provide concept bank handouts. 5. Prepare exit tickets (paper or digital).
Activities	<p>Introduction (5 mins): Options Explosion</p> <ul style="list-style-type: none"> Arrange students into small groups, each representing a different biome. Give each group a photo of a habitat under threat from climate change impacts (e.g., melting ice, drought), or use the photos in the presentation. Prompt: “List as many possible adaptations as you can think of that would help these organisms survive their changing habitat.” Encourage rapid-fire ideas. One representative from each group shares their brainstorm with the class. <p>Concept review (5-10 min): Identifying Concepts</p> <ul style="list-style-type: none"> Using student examples, elicit the three types of adaptations (structural, behavioral, physiological) by asking, “What function would this adaptation serve? How would it change the animal, and how would it improve its chances?” Have groups swap brainstorms and identify the types of adaptations. <p>Main Activity:(30 min) Kialo Discussion - Engaging with multiple perspectives</p> <ul style="list-style-type: none"> Provide students with the Kialo discussion “Which type of adaptation gives organisms the greatest survival advantage in the era of rapid climate change?” Create in small group mode to allow for students to interact meaningfully with other perspectives. Provide students with the following stage instructions to assist deeper reasoning. <ul style="list-style-type: none"> Stage 1: (5 min) Add starting claims for and against the different types of adaptations. Students should add claims for all three forms of adaptation. Stage 2: (15 min) Develop claims by adding examples and evidence, or explain why a claim is incorrect — task students with developing 1 of their claims and 9 from other students. Stage 3: (5 min) No more claims can be added. Students read through the claims and vote on the ones they feel create the best argument.
Reflection	<p>Exit Ticket: Critical Thinking - Consider ideas from multiple perspectives. Discuss the following questions in open discussion or exit ticket format:</p> <ol style="list-style-type: none"> Before I thought... At the beginning of the discussion, which form of adaptation did you believe may provide an organism with the greatest chance of survival? Why? Now I think... After interacting with your peers and reviewing their arguments, how has your perspective changed? Provide an example of evidence from a peer.