

A hand-drawn graphic on a light green background with a white grid pattern. The central text reads "AP Bio FRQ Fridays" in large, stylized, rounded letters. "AP Bio" is in teal, and "FRQ Fridays" is in purple. Below this, it says "2014 #7 Thermoregulation" in a smaller, black, sans-serif font. To the right of the text is a small, cute penguin wearing a black hat and a white bowtie, with the word "Hi!" written above it. The background is decorated with various colorful icons: a DNA double helix in blue and red, a yellow pencil, a purple spiral notebook labeled "NOTES", yellow paper clips, teal clouds, teal exclamation marks, and colorful streamers in orange, green, and pink.

# AP Bio FRQ Fridays

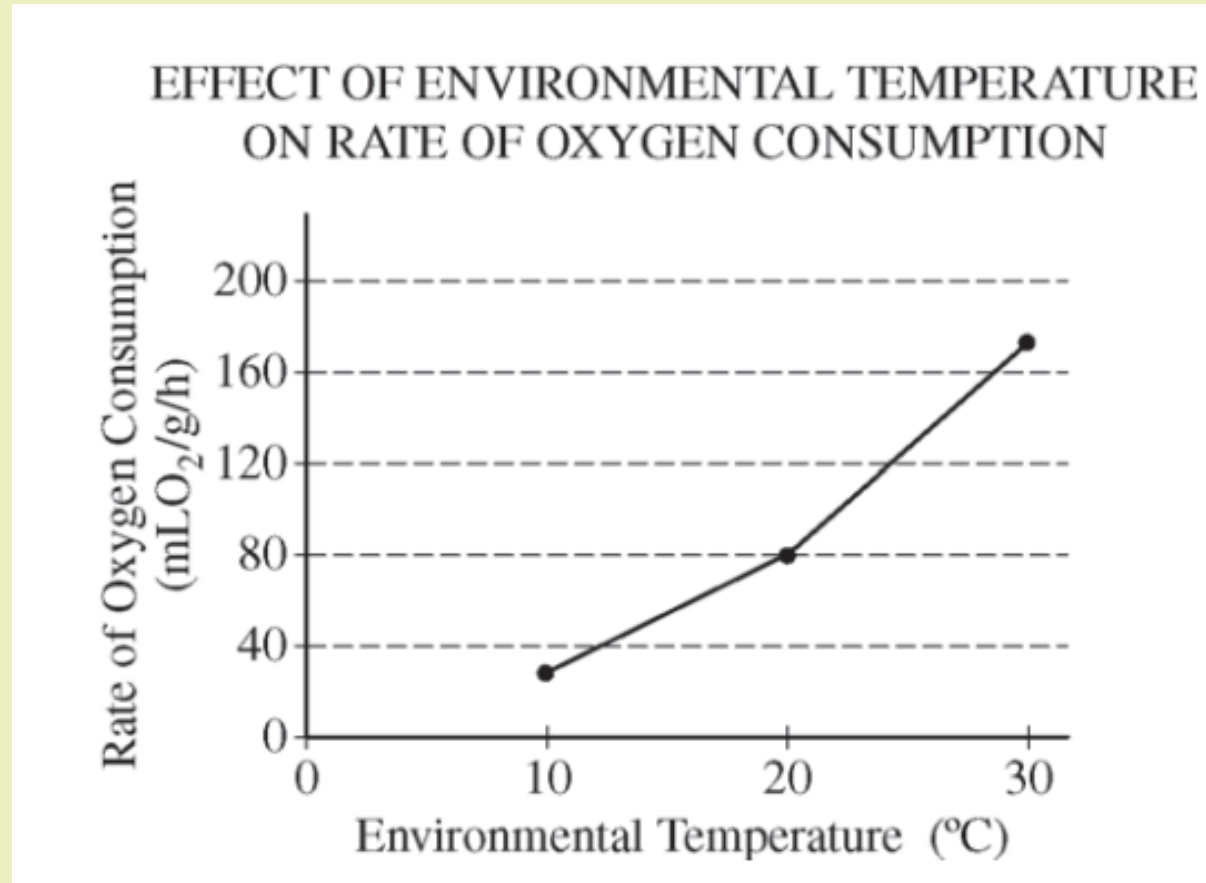
2014 #7  
Thermoregulation



# FRQ Friday #27

2014 #7

- (a) Based on the graph, **describe** a specific method of thermoregulation used by the species of animal. **Provide** support for your answer using the data.



# FRQ Friday #27

2014 #7

- (a) Based on the graph, describe a specific method of thermoregulation used by the species of animal. Provide support for your answer using the data.

Describe method (1 point)	Support (1 point)
This species is an ectotherm/incapable of endoregulation	<ul style="list-style-type: none"><li>• Increased metabolic rate/O<sub>2</sub> consumption rate/respiration rate with increased temperature</li><li>• Decreased metabolic rate/O<sub>2</sub> consumption rate/respiration rate with decreased temperature</li><li>• If the animal were endothermic, O<sub>2</sub> consumption rate/respiration rate/metabolic rate would increase with decreasing temperature</li></ul>
Behavior to adjust body temperature, i.e., seeking shade, basking in the sun, burrowing in mud, evaporative cooling	<ul style="list-style-type: none"><li>• Increased metabolic rate/O<sub>2</sub> consumption rate/respiration rate with increased temperature</li><li>• Decreased metabolic rate/O<sub>2</sub> consumption rate/respiration rate with decreased temperature</li><li>• This species is ectothermic/incapable of endoregulation</li></ul>



# FRQ Friday #27

2014 #7

- (a) Based on the graph, **describe** a specific method of thermoregulation used by the species of animal. **Provide** support for your answer using the data.

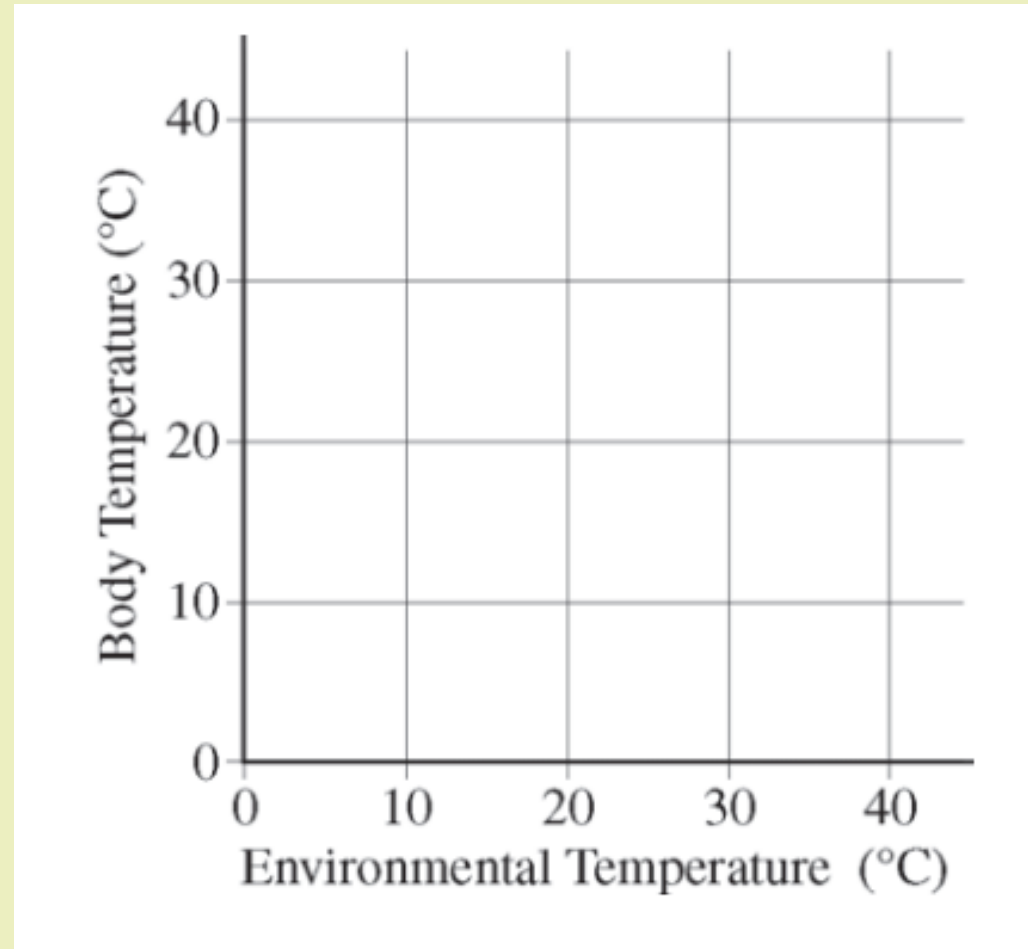
A method of thermoregulation is **ectothermic** regulation experienced by cold-blooded animals such as reptiles like lizards. Ectothermic regulation means that the environment controls the body temperature of the organism. **As the environmental temperature increased, body temperature and other metabolic activities increased causing an increase in rate of oxygen consumption.**



# FRQ Friday #27

2014 #7

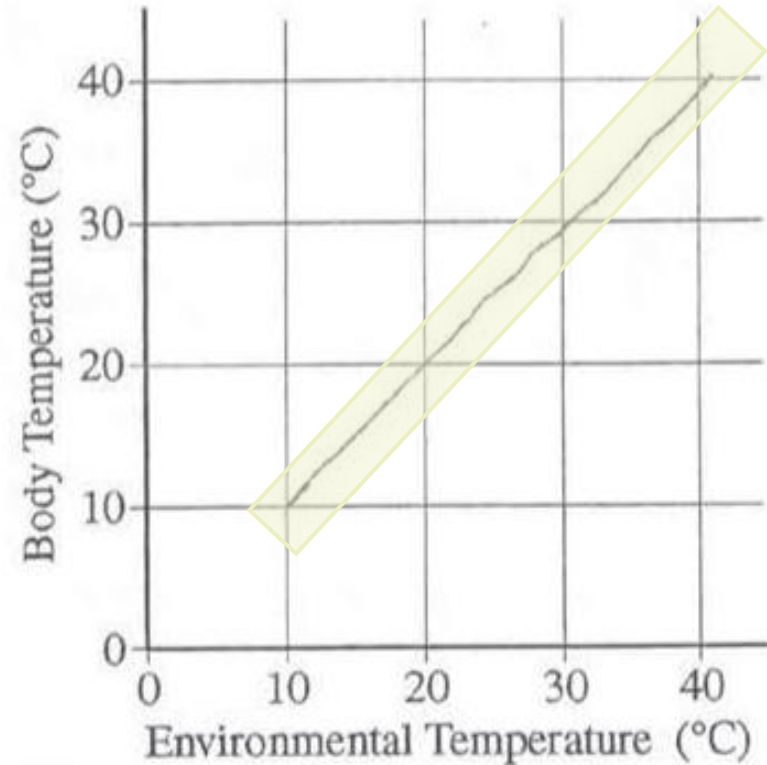
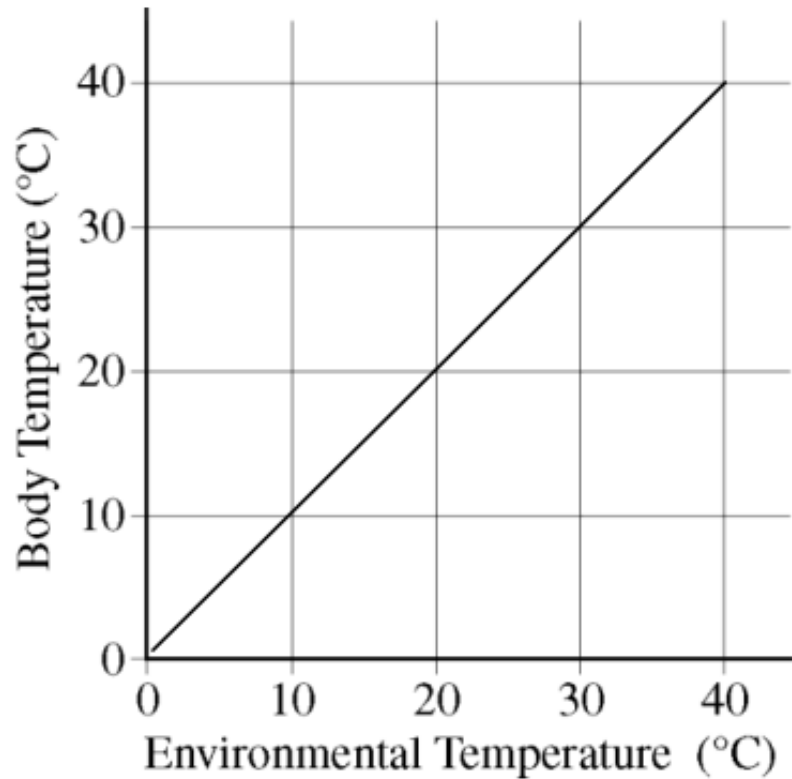
(b) On the labeled axis provided below, **draw** a line to indicate the most likely relationship between body temperature and environmental temperature in the species.



# FRQ Friday #27

2014 #7

(b) On the labeled axis provided below, **draw** a line to indicate the most likely relationship between body temperature and environmental temperature in the species.



- Line/curve with positive slope

