Cellular Respiration, Chapter 9, Pages 220-232

Objectives: Students will

- A) Define calorie
- B) Relate glucose to ATP
- C) Define respiration and write the chemical formula
- D) Summarize the location, reactants and products of the three stages of respiration
- E) Summarize what happens when there is a lack of oxygen
- F) Summarize how energy is used in the short term and the long term
- G) Compare respiration to PSN

Why	do we eat?
• Raw materials for	cell
• What rep	resents energy in food?
*	= unit of

in food, measured as ___

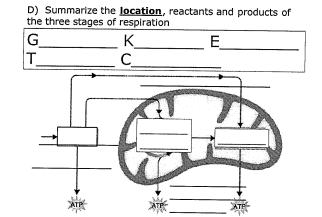
__ = determines

in food

B)	Relate glucose to ATP
•	= food energy source
•	= chemical energy our cells us
•	becomes =
	ADP Adenosine diphosphate (ADP) + Phosphate Partially charged battery Adenosine triphosphate (ATP)

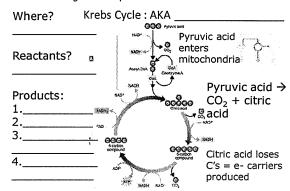
С) Define respiration and write the chemical formula Cellular respiration
•	Releases by breaking down in the pr esence of
•	pr ocess, takes
•	Chemical Equation
•	+ →

Word Equation



e the loc le three s	ation, react tages of res	tantsand spiration	w	here?
S 2 ATF	2 ADP			2 molecules acid
(3 of	them):			*
	S 2 VIII	S 2ADP	Proc of process and the stages of respiration	Produces of pyruvic s 2 ADP 4 ADP 4 ADP 2 NAD+

D) Summarize the location, reactants and products of the three stages of respiration



D) Summarize the location, reactants and products of the three stages of respiration			
Where?	Electron Transport Hy	drogen Ion Vement Channel	
	T / T	Channel	
Reactants?		Q _{+ Q} ATP	
1	_	Synthase	
2			
Products?			
1			
2	I KAH,	100.00	
	2 WASH	ATP Production	

E) Summarize what happens when there is a lack of oxygen

		Ferm	entation =	
instead of		after		
OOOOO Glucose	2 NAD+ 2 NADH	Pyruvic acid _{2 NADH}	Lactic acid	
Products	•	Whe	re?	
2				

F)	Summarize how energy is used in the short term	
and the long term		

•	Ene	rgy = intense exercise	THE ST.
•	First few seconds = _	****	1747
•	After this,	=	
	~ 90 s.		¥ i.
•		Energy	i i
•		(15-20 min.)	F-comme
•	After this, stored		
	() is burned		

D) Compare respiration and PSN PHOTOSYNTHESIS	RESPIRATION		
Make	Break apart		
Give off	Use		
Useas	Make		
	Give off		
Use			
Photosynthesis			
$6CO_2 + 6H_2O + sun \rightarrow C_6H_{12}O_6$	+ 60 ₂		
Respiration			
$C_6H_{12}O_6 + 6O_2 \rightarrow 36 \text{ ATP+ } 6CO_2 + 6H_2O$			
for PSN	= of Res		
of Resp	= of PSN		

Answer the following questions from the video or your notes:

- 1. What is the formula of respiration?
- 2.List the three steps of respiration
- 3. How much total ATP is produced from respiration?
- 4. Why do gym trainers encourage individuals to work out for a minimum of 20 minutes?

C) Summarize the three stages of cellular respiration

