

Meiosis I – Independent assortment

Success Criteria: Being able to describe and outline the process of independent assortment

TASK 1 – Independent assortment is an important process that happens in Meiosis that increases genetic diversity. Fill in the gaps below using the word bank. Also write down the correct phases underneath each image.

	<p>Chromosomes have _____ (in _____ form).</p> <p>Chromosomes will then form _____</p> <p>_____.</p>	<p>WORD BANK:</p> <p>Bivalent Homologous Replicated Pair</p>
<p>What phase:</p>		

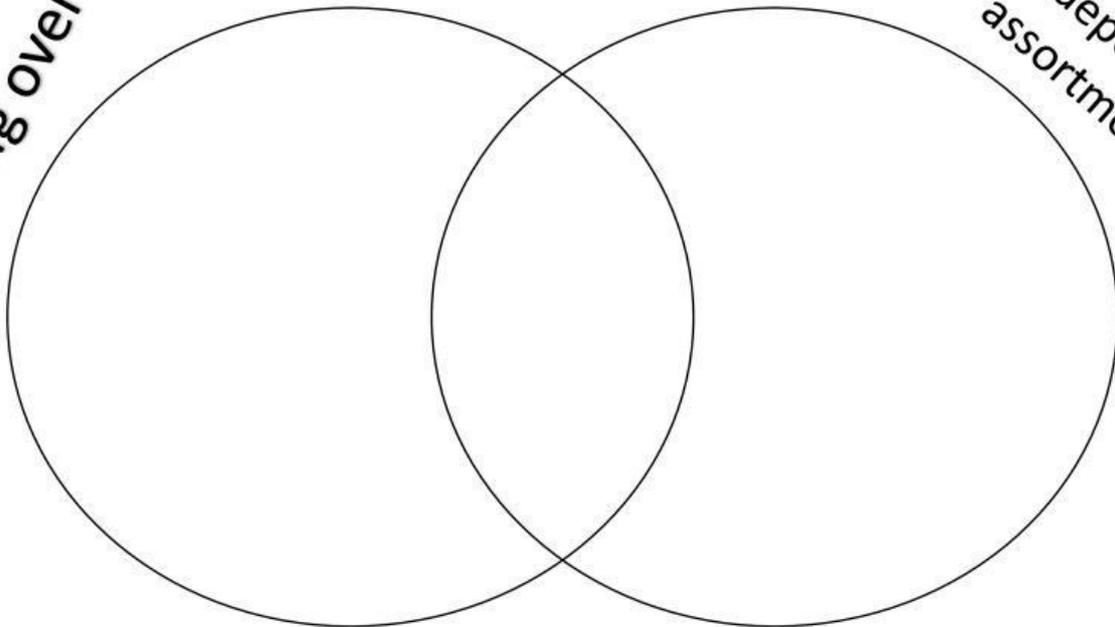
	<p>_____ will start to line up at the _____ in _____ formation.</p> <p>The way the chromosomes arrange themselves is up to chance. The diagram on the right shows two possible _____. Keep in mind that initial chromosomes are the _____, it is just the arrangement that _____.</p>	<p>Tetrad Same Chromosomes Equator Arrangements Differs</p>
<p>What phase:</p>		

	<p>Let's focus on the first alignment. When this finishes _____ the 4 _____ that form contain sY, sY, _____, Sy allele _____.</p> <p>The second alignment produces _____ gametes that contain sy, sy, SY, _____.</p> <p>The slight change in arrangement has given _____ combinations.</p>	<p>Different Sy Combinations Meiosis Gametes 4 SY</p>
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TASK 2 – Lets compare Crossing over and independent assortment

Crossing over

Independent assortment



Occurs in metaphase I	Involves the swapping of genetic information
Occurs in prophase I	Increases genetic diversity
Occurs in Meiosis I	Creates new genetic combinations
Creates new genetic combinations by orientating chromosome pairs	Involves the swapping of genetic information, when chromatids overlap
Occurs in both Meiosis I and II	Only occurs in Meiosis I

TASK 3 – Write a short paragraph

– Explain what would happen if no crossing over or independent assortment occur during meiosis? Explain what would happen in the short AND long term. (Some key words you should include in your answer genetic diversity, survival, environment)