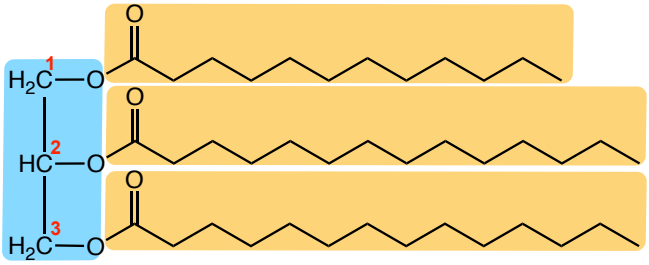
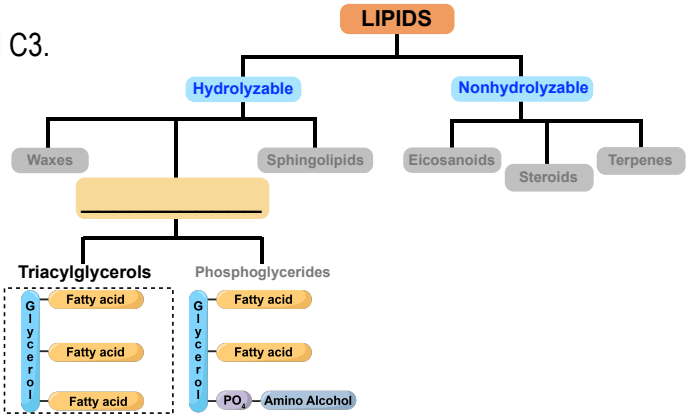
CONCEPT: TRIACYLGLYCEROLS

- **Glycerolipids:** lipids with fatty acid chains attached to a _____ backbone.
- **Triacylglycerols** (triglycerides): ____ fatty acid chains attached to glycerol through _____ bonds.
  - □ Fatty acids can all vary.
- C2 may be _____ depending on the fatty acids at C1 and C3.





- Triacylglycerols function as _____ source and storage (_____ tissue) in animals.

EXAMPLE: Draw a triglyceride structure composed of palmitoleic acid (C1), myristic acid (C2) and oleic acid (C3).

STEP 1: Draw glycerol molecule and the 3 fatty acids. Place glycerol ____ groups next to _____ groups of fatty acids.

□ Instead of OH on glycerol, write ___. □ Do _____ draw OH on fatty acids.

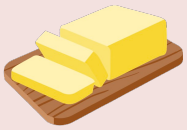
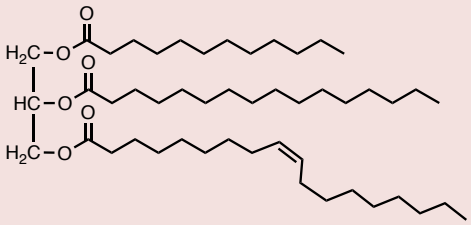
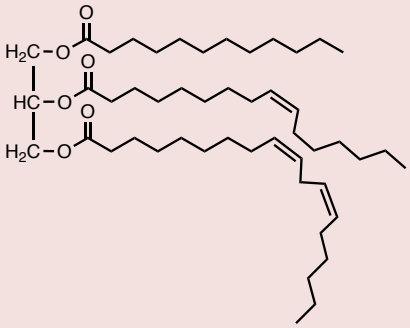
STEP 2: Form ester bonds between glycerol OH groups and the 3 fatty acids.

CONCEPT: TRIACYLGLYCEROLS

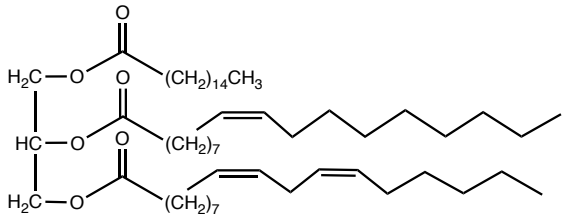
Fats and Oils

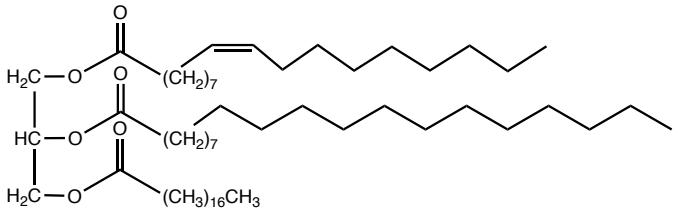
- Fats and oils are _____ of different triacylglycerols.
- Saturated fatty acids can pack more tightly in a solid phase which ____ interactions between one another.
  - □ ____ Interactions = _____ Intermolecular Forces = ____ Melting Points.

Fats and Oils

	Melting Point	Saturation	Example
Fats (animal) 	_____ • _____ at room temp	• ____ # of double bonds • ____ in unsaturated fatty acids	
Oils (vegetable) 	_____ • _____ at room temp	• ____ # of double bonds • ____ in unsaturated fatty acids	

EXAMPLE: Which triacylglycerol would you expect to be liquid at room temperature?

a) 

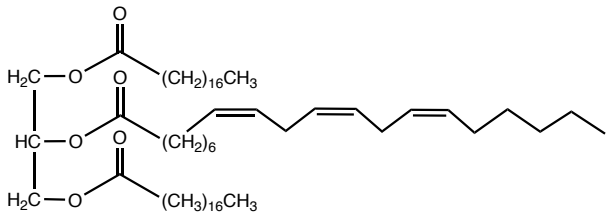
b) 

PRACTICE: Draw a skeletal structure of a triglyceride with linolenic acid (C1) and 2 palmitoleic acids. State whether it would have high or low melting point.

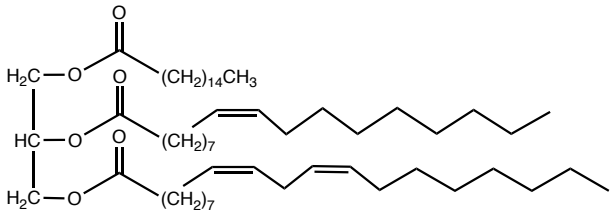
CONCEPT: TRIACYLGLYCEROLS

PRACTICE: Which triacylglycerol is optically active?

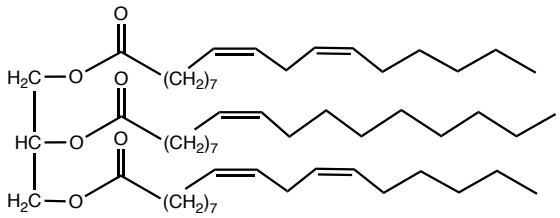
a)



b)



c)



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