Food, Nutrition & Health

Topic: Gelatine (Form 4&5)

Key teaching points:

- What is gelatine?
- What are the properties of gelatine?
- What happens when gelatine is mixed with water?
- What are some Domestic and Industrial Uses of gelatine?
- Gelatine don'ts!
- Cooking with Gelatine –Tips and Tricks (View Video); *types of gelatine, preparing gelatine for use, using gelatine in food preparation, quick dessert using gelatine (Panna Cotta)*
- Activity Sheet!

What is gelatine?

Gelatine is a protein which is extracted from the collagen present in the skin, tendons, bones, and connective tissue of cattle or pigs that have been slaughtered for meat.

What are the properties of gelatine?

Gelatine is

- Tasteless
- Transparent
- Odourless
- A faint yellow brittle solid

What happens when gelatine is mixed with water?

When mixed with water, gelatine absorbs it and swells. It swells because the protein molecules forms a three-dimensional network which entangles the water and immobilizes it. When water trapped in this way, it forms a gel.

What are some Domestic and Industrial Uses of gelatine?

Domestic Uses

- ✓ **Jellies:** clear or plain, sweet or savoury.

- ✓ **Whips:** made by beating plain jelly into a froth until it thickens.
- ✓ **Bavarian:** made by folding in whipped cream to a plain jelly.
- ✓ **Sponges:** made by adding whipped egg whites to a plain jelly, to form a spongy-textured sweet.
- ✓ **Aspic:** for setting vegetables, meat and fish in a savoury jelly.

Industrial Uses:

- ✓ **Ice cream:** as a stabilizer, to ensure a smooth texture.
- ✓ **Thickening agent:** soups and creams.
- ✓ **Yogurt:** as a stabilizer to stop separation.
- ✓ **Medicines:** as a coating for pills and capsules.
- ✓ **Meats:** for canned hams and pressed meats.

Gelatine Don'ts

Don't

- Add gelatine to very hot milk: *it causes it to curdle.*

Don't

- Use fresh pineapple: *it contains an enzyme called bromelain which prevents gelatine form setting*. Fresh pineapple should be cooked first.

Don't

- Add dissolved hot gelatine liquid to icy cold mixtures; *it would not mix well and will form "ropey" globules.*

Cooking with Gelatine –Tips and Tricks

Types of gelatine, preparing gelatine for use, using gelatine in food preparation, quick dessert using gelatine (Panna Cotta). VIEW VIDEO here

https://www.youtube.com/watch?v=kJgcZzGLLPA

ACTIVITY SHEET

SECTION 1 – *Match the correct definitions to the terms they describe*

Gelatine blooming Gel Agar Agar

Gelatine Aspic Boil Leaf/Sheet

Firm Set Bromelain Panna Cotta

Protein which comes from collagen from animals' bones/ligaments/tendons/skin.	
When water is trapped in the gelatine's three-dimensional protein network.	
Savoury gelatine prepared from vegetables.	
Gelatine is available in powder and _____ forms?	
A seaweed based gelatine that can be used for vegan dishes.	
Dispersing gelatine in cool water before cooking in order to get gelatine in solution properly.	
Do not _____ gelatine as it will lose it thickening potential.	
A gelatine based dessert known as "cooked cream."	
2 tsp gelatine to 2 cups liquid.	
Cooking fresh pineapple first, inactivates the enzyme.	

SECTION 2 – *Short answer questions*

1. What are the properties of gelatine?

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   ……

   ……

2. Identify three (3) Domestic and three (3) Industrial uses of gelatine:

   Domestic Uses of Gelatine:

   a. ……

      ……

   b. ……

      ……

   c. ……

      ……

   Industrial Uses of Gelatine:

   a. ……

      ……

   b. ……

      ……

   c. ……

      ……

End of Activity Sheet

ACTIVITY "ANSWER SHEET"

SECTION 1

Protein which comes from collagen from animals' bones/ligaments/tendons/skin.	Gelatine
When water is trapped in the gelatine's three-dimensional protein network.	Gel
Savoury gelatine prepared from vegetables.	Aspic
Gelatine is available in powder and _____ forms?	Leaf/Sheet
A seaweed based gelatine that can be used for vegan dishes	Agar Agar
Dispersing gelatine in cool water before cooking in order to get gelatine in solution properly	Gelatine blooming
Do not _____ gelatine as it will lose it thickening potential.	Boil
A gelatine based dessert known as "cooked cream"	Panna Cotta
2 tsp gelatine to 2 cups liquid	Firm Set
Cooking fresh pineapple first, inactivates the enzyme	Bromelain

SECTION 2

1. What are the properties of gelatine?

   Gelatine is a tasteless, transparent, odourless, brittle solid which is faint yellow in colour.

2. Identify three (3) Domestic and three (3) Industrial uses of gelatine:

   Domestic Uses of Gelatine:

a. Jellies: clear or plain, sweet or savoury.

b. Whips: made by beating plain jelly into a froth until it thickens.

c. Bavarian: made by folding in whipped cream to a plain jelly.

Answers may also include:

- **Sponges:** made by adding whipped egg whites to a plain jelly, to form a spongy-textured sweet.
- **Aspic:** for setting vegetables, meat and fish in a savoury jelly.

Industrial Uses of Gelatine:

a. Ice cream: as a stabilizer, to ensure a smooth texture.

b. Thickening agent: soups and creams.

c. Yogurt: as a stabilizer to stop separation.

Answers may also include:

- **Medicines:** as a coating for pills and capsules.
- **Meats:** for canned hams and pressed meats.

References:

Tull, A. & Coward, A. (2016). Caribbean Food and Nutrition for CSEC. Oxford University Press.

Jospeh, T. (2016, September 14). Tips and Tricks to Gelatin Success [Video file]. Retrieved from https://www.youtube.com/watch?v=kJgcZzGLLPA