

STUDENT WORKSHEETS



WORKSHEET 1: SENSORY EVALUATION

Name: _____

Assess the raw, blanched, steamed, and roasted broccoli.
 Use a 1–9 scale (1 = highly undesirable, 9 = highly desirable)
 Note: This is your opinion.

Sample	Colour (1-9)	Odour (1-9)	Flavour (1-9)	Texture (1-9)	Overall Acceptance (1-9)
RAW					
BLANCHED					
STEAMED					
ROASTED					

1. Which sample did you prefer? Why?

2. Which sample do you think is the healthiest? Explain.



WORKSHEET 2: MEDIA MESSAGE ANALYSIS

Name: _____

Watch the short media clip: *Broccoli: The Superfood That Fights Cancer!* and answer the following questions.
<https://www.youtube.com/watch?v=dAtU9bPoEk0>

1. What health claims are being made?

2. Is the information accurate based on what you've learned?

3. What persuasive techniques are used (e.g., emotive language, celebrity endorsement)?

4. How might this message influence people's attitudes or actions?

APPENDIX 1: SENSORY KEY WORDS AND DEFINITIONS

A list of sensory key words and definitions commonly used to evaluate broccoli in its raw, blanched, and roasted forms, drawing on established sensory analysis frameworks.

Appearance

- **Colour:** The visual shade or intensity of green; can range from pale to vibrant green.
- **Glossiness:** The degree of surface shine; often higher in blanched or roasted broccoli.
- **Uniformity:** How consistent the colour and shape are across the sample.
- **Freshness:** Visual cues indicating how recently the broccoli was harvested (e.g., no yellowing or wilting).

Aroma (Odour)

- **Earthy:** Smell reminiscent of soil or fresh vegetables, common in raw broccoli.
- **Sulphurous:** A cabbage-like, sometimes pungent aroma, more pronounced in cooked forms.
- **Nutty:** Toasted or roasted scent, often present in roasted broccoli.
- **Grassy:** Fresh, green, plant-like aroma, typical of raw broccoli.

Flavour

- **Bitter:** Sharp, sometimes unpleasant taste, often stronger in raw broccoli.
- **Sweet:** Mild, pleasant taste that can develop with blanching or roasting.
- **Umami:** Savoury depth, more noticeable in seasoned or roasted broccoli.
- **Nutty:** Toasted, rich flavour, especially in roasted broccoli.
- **Sulphurous:** Cabbage-like taste, more pronounced when broccoli is overcooked.

Texture

- **Firmness:** The resistance to bite; raw broccoli is crisp, blanched is tender-crisp, roasted may be softer or slightly chewy.
- **Crunchy:** Audible and tactile sensation when biting, strongest in raw broccoli.
- **Tenderness:** Ease of chewing increases with blanching or roasting.
- **Juiciness:** The amount of moisture released when bitten; blanched broccoli can be juicier than raw or roasted.
- **Fibrous:** Presence of stringy or tough fibres, more noticeable in raw or undercooked broccoli.

Overall Acceptance

- **Palatability:** The overall pleasantness or acceptability of the sample, combining all sensory attributes.

After cooking, broccoli is most visually appealing when it retains a vibrant, uniform green colour with a glossy or slightly caramelised surface. Overcooking leads to dull, olive or grey-green tones, while roasting can add golden-brown highlights from the Maillard reaction, enhancing both colour and flavour.

Colour

- **Vibrant Green:** A bright, intense green hue often seen in broccoli that has been properly blanched or steamed. This indicates freshness and optimal cooking, as blanching and shocking in ice water help set and brighten the green pigment (chlorophyll).
- **Dull Green/Olive:** A faded or greyish-green colour that can result from overcooking. This occurs when chlorophyll breaks down, often making the vegetable look less appetising.
- **Golden-Brown:** A brownish, toasted colour that appears on the surface of broccoli when it is roasted or pan-fried. This is due to the Maillard reaction, a chemical process that occurs at high temperatures and contributes to both colour and flavour development.
- **Uniformity:** The consistency of colour across the broccoli florets and stems. Even, uniform colour is generally more visually appealing and suggests even cooking.

Visual Appeal

- **Glossy:** A shiny, attractive surface, often seen after blanching or when broccoli is tossed with a small amount of oil or seasoning. Glossiness can enhance the perception of freshness and moisture.
- **Caramelised:** A slightly browned, crisped appearance on the edges or tips of broccoli, especially after roasting or grilling. This is associated with enhanced flavour and visual interest due to the Maillard reaction.
- **Bright/Brilliant:** Used to describe the appearance of well-cooked broccoli, especially when the green is intensified through blanching or steaming.
- **Appetising:** A general term for visual attractiveness, combining colour, gloss, and uniformity to create an inviting appearance.

The Maillard reaction is a chemical reaction that happens when proteins and sugars in food are heated together—usually at high temperatures (above 140°C). It's responsible for the browning, aroma, and rich flavours in many cooked foods.

What Happens in the Maillard Reaction?

1. Amino acids (building blocks of proteins) react with sugars.
2. When heat is applied, they combine and form new compounds.
3. These compounds give food a brown colour and a complex, savoury flavour (also called 'umami').

Why It Matters?

- It makes food taste richer, deeper, and more appealing.
- It contributes to the crispy texture and golden-brown colour of cooked food.
- It's not the same as caramelisation, which only involves sugar, not protein.