

Making Hand Sanitizer Liquid at Home

SENIOR SECONDARY ENRICHMENT PROGRAM
GRADE 11



Main Goal

- ▶ Making a hand sanitizer that contains alcohol 70% – 80% at home.
- ▶ Alcohol 96% and synthetic Aloe Vera are given.
- ▶ Develop the product and sell it after Covid-19 outbreak.

Timelines

| No. | Date | Activity |
|-----|--------------|---|
| 1 | 8 June 2020 | <ul style="list-style-type: none">• Short briefing about the program• Research some things |
| 2. | 9 June 2020 | Students take the materials (Aloe Vera and 96% alcohol) at school |
| 3. | 10 June 2020 | Students make a hand sanitizer at home (zoom meeting with their teacher) |
| 4. | 11 June 2020 | Students design a label (sticker) for their spray bottles (the product will be sold after Covid-19 outbreak, the money will be donated to the needy people) |
| 5. | 12 June 2020 | |
| 6. | 13 June 2020 | |
| 7. | 14 June 2020 | |

Timelines

| No. | Date | Activity |
|-----|--------------|---|
| 8. | 15 June 2020 | Students do a research to develop their hand sanitizers. <ul style="list-style-type: none">• How to sterilize the product ?• Is it possible to use natural Aloe Vera instead of Synthetic Aloe Vera ?• What is the advantage of using natural Aloe Vera ?• Is it possible to make a hand sanitizer gel ? |
| 9. | 16 June 2020 | |
| 10. | 17 June 2020 | Students make a research report and budget plan (list of expenses, price, and profit) |
| 11. | 18 June 2020 | |
| 12. | 19 June 2020 | Due date of submission |

Materials

- ▶ Synthetic Aloe Vera.
- ▶ 96% alcohol.
- ▶ Water.



Apparatus

- ▶ Spray bottle.
- ▶ Digital balance.
- ▶ Small place for Aloe Vera (provided by student).
- ▶ Measuring cylinder.
- ▶ Beaker glass.
- ▶ Spatula.

Note:

Measuring cylinder, beaker glass, and spatula are NOT provided. Think about the stuff in your house that can be used as the alternative apparatus.



Day 1

Research these following things !

- ▶ What is the role of alcohol in hand sanitizer ?
- ▶ Can alcohol is substituted by other substance ?
- ▶ Why 70% - 80% alcohol must be used instead of 96% alcohol ?
- ▶ Why Aloe Vera is added ?
- ▶ Can Aloe Vera is substituted by other substance ?
- ▶ Is there any additional substance that can be added into alcohol besides Aloe Vera ?
- ▶ Why distilled water must be used instead of tap water or mineral water to make a hand sanitizer ?

Note: your answer must be explained clearly

Please submit your answers
on the google classroom
today at 1.00 p.m.



Day 2

Before you start to make a hand sanitizer at home, check your understanding about these following things.

- ▶ What is solution ?
- ▶ What is concentration in mol dm^{-3} ?
- ▶ What is concentration in percentage by mass or volume ?
- ▶ What is the similarity and difference between concentrated and dilute solution ?
- ▶ How to dilute a solution with distilled water ?
- ▶ How to make alcohol 80% from alcohol 96% ? Explain your answer.







