

# SECONDARY 1

## Curriculum Information

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information!

[www.agrader.sg](http://www.agrader.sg)

# Welcome to AGrader

Dear Parents,

Thank you for your interest in the AGrader Programme. This Learning Resources Preview is specially compiled to showcase to you the AGrader curriculum for Secondary 1.

There are 2 Parts to this Learning Resources Preview:

<b>PART I: Curriculum Information</b>	<p><b>i. Subject Curriculum Structure &amp; Details</b></p> <p>Every subject's curriculum is carefully structured to allow AGrader's students to fully grasp school concepts. Have a close look at our Subject curriculum structure and details to fully understand how your child will benefit and improve with a structured learning plan! 😊</p> <p><b>ii. What's So Special About AGrader's Curriculum?</b></p> <p>The Unique Learning Points of the AGrader Curriculum section will explain to you what sets the AGrader Curriculum apart from other tuition providers. 😊</p>
<b>PART II: Worksheets &amp; Answers</b>	<p><b>i. Excerpts from AGrader's Worksheets (For Students)</b></p> <p>These are snippets of our ACTUAL worksheets, specially chosen from our worksheets to showcase the unique parts of our curriculum. <i>(Do let your child try them out! 😊)</i></p> <p><b>ii. Answers (For Parents)</b></p> <p>You may use this to go through the answers with your child after he/she has tried the questions! 😊</p>

## What Students Will Receive



High-Quality Weekly Lessons + Improve BEYOND THE CLASSROOM EverLoop

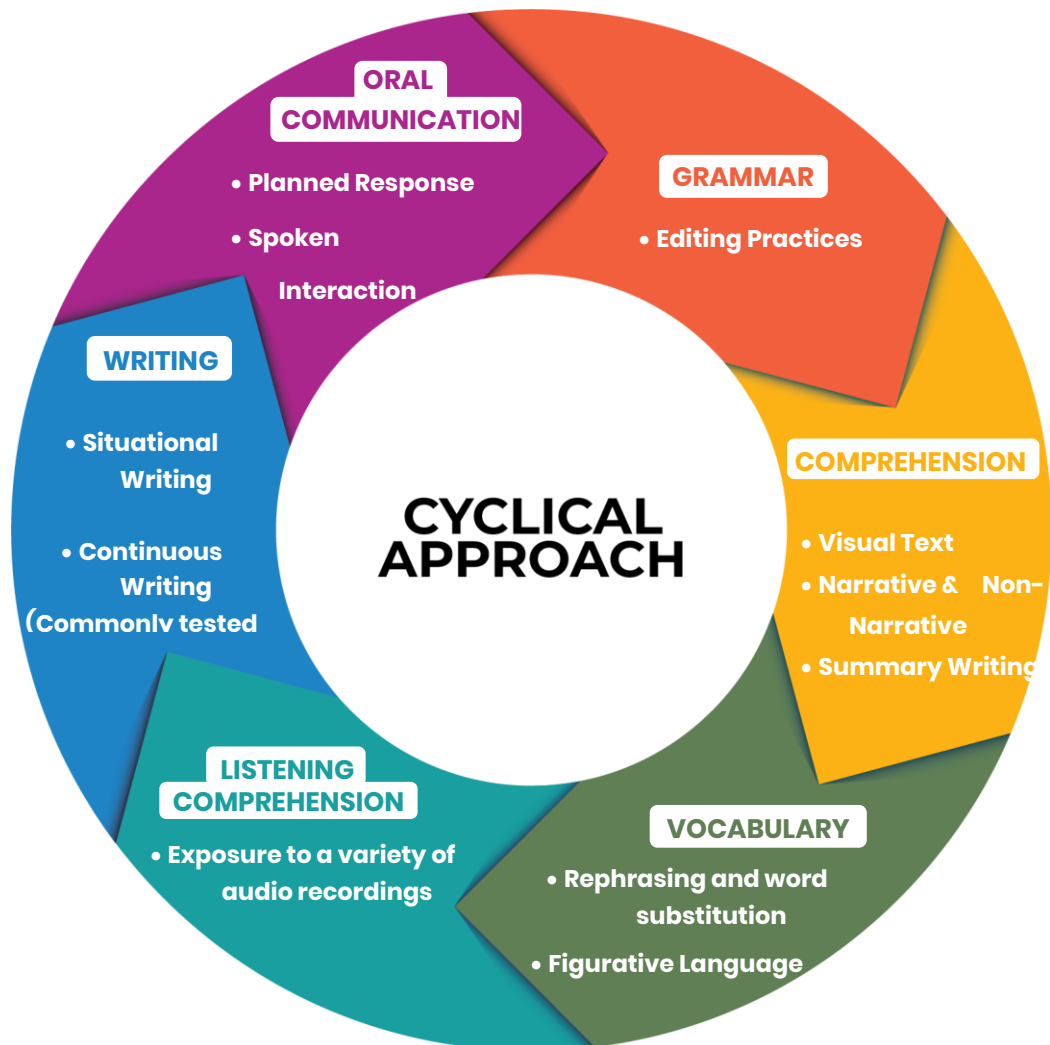




## SECONDARY ENGLISH Curriculum Structure



**AGrader's Secondary English curriculum is delivered in a cyclical approach, which gives our students a holistic exposure to the different components and papers, according to the latest MOE syllabus.**



### CURRENT AFFAIRS

Recent news articles are injected into the curriculum to broaden student's general knowledge.

### SUGGESTED ANSWERS

Students will be provided with suggested answers crafted by our Curriculum Writers to refer to.



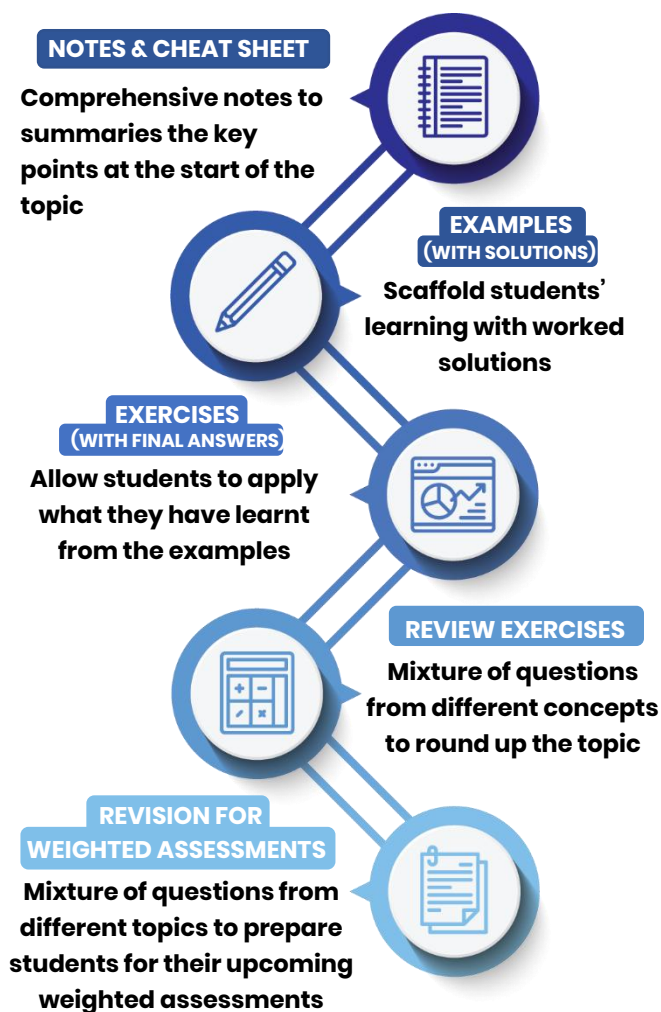


# SECONDARY MATHEMATICS

## Curriculum Structure



AGrader's Secondary Mathematics curriculum is specially designed using a step-by-step approach structure, according to the latest MOE syllabus.



**Worksheets Specially Designed According to Exam Format**

**Paper 1: 26 Short Answer Questions**

**Paper 2: 9 to 10 Varying Questions**

### ✓ ORGANISED

Examples and exercises are organised in terms of concepts to allow students to identify the different techniques to tackle different types of questions.

### ✓ SCAFFOLDED

Concepts are arranged neatly from easiest to hardest in a "building-block" format, building upon the previous concept to enhance a learner's understanding.

### SI CURRICULUM DETAILS

Term 1 (Jan to Mid-Feb)	Term 2 (Mid-Feb to End-Apr)	Term 3 (May to End-Jul)	Term 4 (End-Jul to End-Sep)
<ul style="list-style-type: none"><li>• Prime, Factors &amp; Multiples</li><li>• Real Numbers</li></ul>	<ul style="list-style-type: none"><li>• Approximation &amp; Estimation</li><li>• Basic Algebra &amp; Algebraic Manipulation</li><li>• Linear Equations</li><li>• Linear Functions &amp; Graphs</li><li>• Number Patterns</li><li>• Percentage</li></ul>	<ul style="list-style-type: none"><li>• Ratio, Rate &amp; Speed</li><li>• Basic Geometry</li><li>• Polygons &amp; Geometrical Constructions</li><li>• Perimeter &amp; Area of Plane Figures</li><li>• Volume &amp; Surface Area of Prisms &amp; Cylinders</li></ul>	<ul style="list-style-type: none"><li>• Statistical Data Handling</li><li>*Diagnostic Test</li></ul>







# WHAT IS SO SPECIAL ABOUT THE AGRADER CURRICULUM?



The AGrader Curriculum is specially written and crafted by our in-house Curriculum Team of subject experts, each with years of experience and deep understanding of the MOE syllabus.

At AGrader, we strive to continually improve and innovate our curriculum materials and methodologies to help our students improve their grades.

Below is a summary of some of the Unique Learning Points that put AGrader's curriculum materials ahead of others.

## ENGLISH



### Deep Focus on Development of Students' Comprehension & Writing Abilities

*The AGrader English Programme primarily focuses on developing our students' comprehension & writing abilities via bite-sized practices & a "Step-By-Step", "Model-Essay-Broken-Down" approach.*



Improve general knowledge and awareness of current affairs



Critical thinking skills are honed as students make use of comparisons of related articles for their own writing



Enhanced comprehension & writing abilities



## MATHEMATICS



### Well Structured & Well Thought-Out Notes & Exercises in Increasing Difficulty to Help Students Learn in a "Step-by-Step" Approach

*A carefully structured and well thought-out curriculum helps students gain confidence through a scaffolded learning approach & consistent practice.*



Improve abilities to identify similar types of questions and applying the correct methods in solving them



Reduce careless mistakes



Improve speed of tackling questions



Improve application skills to better relate concepts learnt with real-world context questions



# What Is So Special About the AGrader Curriculum?

## What Students Will Receive: (In addition to AGrader's Weekly Worksheets)



### Term Checklist

Checklists from the teacher to monitor the progress of your child.



### Cheat Sheets & Concept Maps

Laminated vibrant cheat sheets and concept maps to help students learn more effectively!

## Additional After-Class Resources: (Only at AGrader in Singapore)

1



### EverLoop Revision Sessions

Flagship product that consists of both revision and topical learning packs. You can either choose to revise holistically through a "revision pack", or revise more specifically through a "topical pack".

2



### LessonTube

A centrally developed catalog of all our lessons that are taught every week. All content is organised into specific pages so you can easily access and revisit or revise the content that you either missed or do not understand fully.

3



### Basic Build-up

Extra learning videos specially developed (not found in normal lessons) that target fundamental concepts to help you understand a certain topic better.

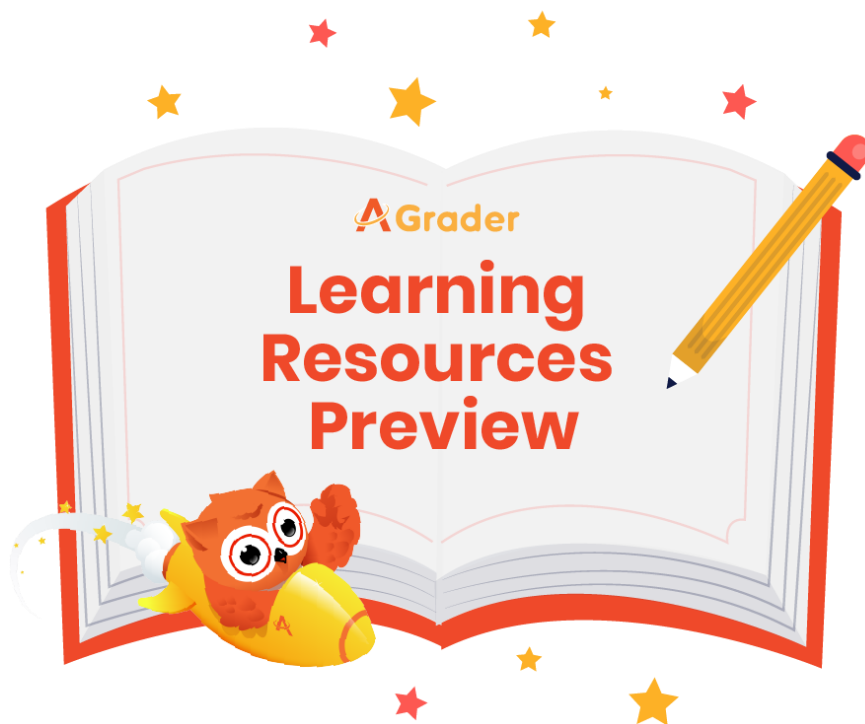
4



### Access to Learning Resources of up to 3 Previous Levels

Get access to learning resources of up to 3 previous levels to revise previous levels and reinforce your core fundamental knowledge.





# SECONDARY 1

## Worksheets & Answers

(For Students)

(For Parents)

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## What Students Will Receive



**High-Quality Weekly Lessons** + **Improve BEYOND THE CLASSROOM**

**EverLoop** (P1 and above)

AGrader Learning Centre  
Discover the Ace in You

## Secondary 1 English - Editing

### Common Errors to Spot in Editing

First, we will focus on some of the more common errors that appear in editing exercises. For each question, circle the error and suggest an appropriate word to replace it.

#### **Verbs (tenses and participles) & Subject-verb agreement**

1. The smallest, the runt of that year's litter, were hardly bigger than a throw pillow.

Correct word: \_\_\_\_\_

Explain the error made: \_\_\_\_\_

\_\_\_\_\_

2. More dominant and rare species of rainforest trees and shrubs will be plant in Singapore.

Correct word: \_\_\_\_\_

Explain the error made: \_\_\_\_\_

\_\_\_\_\_

3. The work will involve planting tree species that can increase nitrogen levels in the soil, which encourage plant growth.

Correct word: \_\_\_\_\_

Explain the error made: \_\_\_\_\_

\_\_\_\_\_

4. Follow the success of its latest product, the company decided to expand overseas.

Correct word: \_\_\_\_\_

Explain the error made: \_\_\_\_\_

\_\_\_\_\_

5. Educators should help their students discover more joy and developed stronger intrinsic motivation in learning.

Correct word: \_\_\_\_\_

Explain the error made: \_\_\_\_\_

\_\_\_\_\_





## Editing Exercise

(Guided Practice)

Carefully read the text below, consisting of 12 lines. The first and the last lines are correct. There is one grammatical error in eight of the lines. There are two lines with no errors.

If there is no error in a line, put a tick (✓) in the space provided.

If the line is incorrect, circle the incorrect word and write the correct word in the space provided. The correct word you provide must not change the original meaning of the sentence.

Examples: I arrived to my destination at 2 p.m. \_\_\_\_\_ at \_\_\_\_\_  
My mother always wears sensible clothes. \_\_\_\_\_ ✓ \_\_\_\_\_

When dolphins sleep, one side of their brain stays awake and the opposite eye stays open to watch for danger and rise for the surface to breathe. Meanwhile, 1. \_\_\_\_\_  
the other half of their brain sleep and the opposite eye is closed. After about two 2. \_\_\_\_\_  
hours, the sides switch so the entire brain gets rest. This is called “cat-napping”. 3. \_\_\_\_\_  
During humans' long hours of unconscious sleep, we are not aware of their 4. \_\_\_\_\_  
surroundings and we breathe automatic. Dolphins have a voluntary respiratory 5. \_\_\_\_\_  
system, which is where they have to keep part of their brain alert to breathe. To 6. \_\_\_\_\_  
avoid drowning, they also have to control their blowhole, a flap of skin that opens 7. \_\_\_\_\_  
and closes to breathe and make sounds. Dolphins slumbered by resting in the 8. \_\_\_\_\_  
water, either vertically and horizontally, or while swimming slowly with another 9. \_\_\_\_\_  
dolphin. They also have periods of deep sleep floating at the surface like the log. 10. \_\_\_\_\_  
This is known as “logging”.

*Adapted from [https:// animals.howstuffworks.com/ mammals/ dolphins-sleep-half-brain-at-time.htm](https://animals.howstuffworks.com/mammals/dolphins-sleep-half-brain-at-time.htm)*

### Errors:

1. preposition	2. subject-verb agreement	3. ✓	4. pronouns	5. part of speech
6. interrogative pronouns	7. ✓	8. tense	9. conjunction	10. article





## Secondary 1 English – Essay Writing



### Planning an Essay: Making Characters Come to Life

As a personal recount requires you to tell a story, your characters should be convincing. This is done by **showing and not telling** the reader about the character. There are many ways to make a character come to life, some of which include the following:

- **Sensations:** This refers to making use of the 5 senses. Instead of directly telling the reader what your character is feeling, describe it using his/her involuntary bodily reactions or facial expressions. Instead of directly telling the reader what your character is looking at, describe how the character perceives it using his/her 5 senses.
- **Actions:** Humans often express their emotions through voluntary actions.
- **Voice:** This can refer to both the character's inner voice/thoughts and usage of dialogue.

A good story will employ a combination of these techniques in order to make the characters believable and relatable, as well as to give your story some variety.

#### **Sensations**

Below is a list of some common emotions. Describe what the character would sense or how his/her body would react.

Emotion	Sensations
1. Happiness	
2. Anger	
3. Fear	
4. Sadness	
5. Embarrassment	



## Actions

For each of the actions below, identify the words that describe each character. You may use each word once.

In the last two rows, come up with an action on your own to show something that your character is feeling.

disapproving	defiant	evasive	bored
thoughtful	dejected	confident	determined

Action	Describing word
1. John pursed his lips and clenched his fists.	
2. The teacher stood with her arms stiffly crossed in front of her chest.	
3. Carrie stood with her shoulders hunched and drooping.	
4. Karl avoided eye contact with his mother.	
5. His opponent strode briskly into the room with his body erect.	
6. Christina's brows were furrowed as she studied the strange markings.	
7. The student sat at the back of the class, her chin resting on her palms.	
8. Paul stuck his chin out and shrugged his shoulders.	
9.	
10.	



## Planning an Essay: Making Characters Come to Life

### Voice

Imagine a character in a house where power has gone out and he/she is engulfed in darkness. In the table below, a description of a character who is brave has been provided for you.

Try writing about a character who is timid. You may include other forms of character description, but make sure to include his/her inner thoughts or dialogue.

Brave	Timid
<p>Tommy felt his way around in the darkness. <i><b>I have to find the control for the main power and reset it</b></i>, he thought. With that focus in mind, he headed for the fuse box as best as he could. Out of the blue, he heard a sound come from behind him. Whipping around quickly, he yelled bravely, <b>“Who’s there? Show yourself this instant!”</b></p>	





## Understanding Personal Recount Questions

Having a clear understanding of what the question requires is most helpful when it comes to writing essays. One way to make sure that you fully understand the question is to break it down to its different parts.

**Write about a time when you had to do something that you were afraid of doing.**

Why would you be afraid of doing something?

---

---

---

Why would you do something you are afraid of doing?

---

---

---

What is the change in your character before and after deciding to do the thing you are afraid of?

---

---

---

---

**Note:** When writing your essay, you have to make sure your story links to the question but you should NOT address the question explicitly.

Negative Example:

*A time when I had to do something that I was afraid of doing was when...*



## Secondary 1 English – Visual Text



### Visual Text Exercise 1 (Guided)

**Text 1** is taken from a poster encouraging Singaporeans to be kinder.

The picture depicts \_\_\_\_\_.  
\_\_\_\_\_. His wide smile suggests that he  
is \_\_\_\_\_ about doing this.  
This is an example of \_\_\_\_\_.

→ Negative descriptions

represent \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

→ However, this

demonstrates \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



*Extracted from Singapore Kindness Movement website*

**Text 2** is taken from a social media post.

There's a greater side to Singapore that doesn't always show – our kindness. One of the secrets to happiness is to help others. Being kind to someone doesn't just help the recipient greatly, it improves your overall wellbeing too! Let's be known for our kindness, above all else.



Refer to the poster and social media post on the previous page and answer the questions below.

1. How does the image in the poster support its main message?

---

---

---

 [2]

2. Which sentence in Text 2 reflects the aim in Text 1 for readers to 'Be greater'?

---

---

 [1]

3. "KIASU. SELFISH. RUDE. COMPLAIN KINGS. NO INITIATIVE." What is the intended impact of these negative words?

---

---

 [1]

Thought process:

4. Decide whether the statement below applies to Text 1, Text 2, both texts or neither text.  
Circle the answer you have chosen.

**The tone suggests the writer and reader are of the same status.**

Text 1   /   Text 2   /   Both   /   Neither [1]





## Secondary 1 Mathematics – Topic: Primes, Factors & Multiples (Notes)

### Summary

1. A **prime number** is a whole number (greater than 1) that has **exactly 2 different factors** which can be **divided by only 1 or itself**.
  - Examples of prime numbers: 2, 3, 5, 7, 11, 13, and 17.
2. A **composite number** is a whole number that has **more than 2 different factors**.
  - Examples of composite numbers: 4, 6, 8, 10, 12, 14 and 15.
3. **Prime factors** are **factors that are prime numbers**.
4. **Highest Common Factor (HCF)**: multiply the **lowest power of each common prime factors** of the given numbers.
5. **Lowest Common Multiple (LCM)**: multiply the **highest power of every prime factor** of the given numbers.
6. A **perfect square** is a number whose **square roots are whole numbers**.
  - Examples of perfect squares: 1, 4, 9, 16, 25, 36 ...
  - The index of the prime factors is always a multiple of two.
7. A **perfect cube** is a number whose **cube roots are whole numbers**.
  - Example of perfect cubes: 1, 8, 27, 64, 125, 216 ...
  - The index of the prime factors is always a multiple of three.
8. A number P is a **multiple** of the number Q if  $\frac{P}{Q} = \text{integer}$ .

0 and 1 are neither prime numbers nor composite numbers.



0 is neither prime nor composite as any number multiply by zero is always zero. Therefore, 0 has an infinite number of factors for a product of 0.



## Secondary 1 Mathematics – Topic: Primes, Factors & Multiples (Examples)

### Practical Problems involving LCM/ HCF

#### Example

1. Three bus services operate from the same depot. The first bus services leave at 10-minute intervals, the second at 15-minute intervals and the third at 25-minute intervals. All three bus services leave the depot together at 0800.
- find the time when the three bus services next leave the depot together.
  - find the time when the three bus services leave the depot together for the 5<sup>th</sup> time.

#### Solution

- a) The LCM of 10, 15, 25 intervals determine the time where the 3 buses leave together.

$$10 = 2 \times 5$$

$$15 = 3 \times 5$$

$$25 = 5^2$$

$$\text{LCM of } 10, 15, 25 \rightarrow 2 \times 3 \times 5^2 = 150$$

Hence, the time that the three buses will next leave is  $\rightarrow$  150 min after 0800 is 1030.

- b) There are only 4 time intervals between the 1st time they left at 0800 till the 5th time they left. Hence,

$$150 \times 4 = 600 \text{ mins}$$

$$\frac{600}{60} = 10 \text{ hr}$$

10 hrs after 0800 is 1800

The three bus services will leave the depot together at 1800 for the 5th time.



2. If 104 sweets, 182 stickers and 52 packets of crackers are to be distributed evenly to as many children as possible,
- a) what is the maximum number of children?
  - b) How many sweets, stickers and packets of crackers will each child receive?

Solution

- a) The HCF of 104, 182 and 52 determines the maximum of children for the things to be evenly distributed.

$$104 = 2^3 \times 13$$

$$182 = 2 \times 7 \times 13$$

$$52 = 2^2 \times 13$$

$$\text{HCF of 104, 182 and 52} \rightarrow 2 \times 13 = 26$$

Hence, maximum number of children is 26.

- b) Number of sweets that each child will receive =  $\frac{104}{26} = 4$

$$\text{Number of stickers that each child will receive} = \frac{182}{26} = 7$$

$$\text{Number of packets of crackers that each child will receive} = \frac{52}{26} = 2$$

Hence, each child will receive 4 sweets, 7 stickers and 2 packets of crackers.



Secondary 1 Mathematics -  
Topic: Primes, Factors & Multiples (Exercises)

## Exercise

1. There are three different light bulbs flashing during an event.  
The first light bulb flashes once every 15 seconds.  
The second light bulb flashes once every 40 seconds.  
The third light bulb flashes once every one minute.  
If they flash together at the same time at 0915, at what time will the three bulbs flash again together?
2. If 270 pens, 198 notepads and 108 markers are to be distributed evenly to as many students as possible, what is the maximum number of students? How many pens, notepads and markers will each student receive?

## Secondary 1 Mathematics – Topic: Primes, Factors & Multiples (Review Exercise)

### Review Exercise

1. Given two numbers 80 and 136,
  - a) express each number as a product of its own prime factors in index notation.
  - b) find the lowest common multiple of the two numbers.
  - c) find the highest common factor of the two numbers.
  - d) find the smallest integer  $w$  that  $136w$  is a multiple of 80.



## Answers for **Secondary 1 (English)** Learning Resources Preview

### **Page 3**

Error: were

Correct word: was

The subject of the sentence is the “smallest” (singular).

Error: plant

Correct word: planted

The subject “trees and shrubs” receives the action of being “planted”, hence this sentence is in the passive form → Use the past participle.

Error: encourage

Correct word: encourages

The subject is the singular “act” of increasing nitrogen levels.

Error: Follow

Correct word: Following

This is a participle phrase describing why the company decided to expand overseas → Use the present participle.

Error: developed

Correct word: develop

Verb-noun-verb rule → Second verb should be in its root form. “help their students discover” / “help their students ... develop”

### **Page 4**

for → to

sleep → sleeps

✓

their → our

automatic → automatically

where → why

✓

slumbered → slumber

and → or

the → a

### **Page 5**

- Heart leapt with joy
- Face glowed with happiness
- Ecstasy was written all over his face
- Eyes burned with rage-induced tears
- Body shook with the intensity of his anger
- Face contorted in fury
- Chill went down her spine
- Paralysed in fear
- Stood rooted to the ground
- Felt a weight in her chest
- Lump formed in his throat and he found it hard to speak
- Tears were streaming down her cheeks uncontrollably
- Ears turned pink
- Face flushed in mortification
- Face turned as red as a beetroot

### **Page 6**

Determined

Disapproving

Dejected

Evasive

Confident

Thoughtful

Bored

Defiant

He gave me another blank look as I explained the difficult Mathematics problem to him. – Bewildered

Ricky made a caustic remark about his co-workers, stating that they were not contributing to the company as much as he was. - Condescending





### Page 7

Johnny felt his way around in the darkness. ***What if someone turned the power off on purpose and is just waiting for an opportunity to attack me? Or worse, what if this house is haunted?*** he thought fearfully. He inched his way around the house. Out of the blue, he heard a sound come from behind him. Imagining the worst, he began to scream frantically, ***“Help! Somebody! Please help me! I’m being attacked!”***

### Page 8

Doing something for the first time / out of your comfort zone. OR had a previous experience in which you failed or embarrassed yourself

Desire to challenge yourself / wanted to make someone else proud / bore the responsibility of representing your school or team

Before: Let fear stop yourself from doing something

After: Change in your attitude; gained courage → your reasons for being fearful should remain the same

### Page 9

a man bringing food to an elderly lady; eager/enthusiastic; an act of kindness

the impression that people from other countries have of Singaporeans

a belief that Singaporeans have the potential to do better

### Page 10

It depicts a young man giving food to an elderly lady, which is an example of a kind act that the Singapore Kindness Movement wants to encourage [1m].

The sentence is “Let’s be known for our kindness, above all else.”

They are intended to make Singaporeans feel indignant / motivate Singaporeans to show others that such claims are unjustified [1m].

After identifying that these are negative attributes that people from other countries think Singaporeans have, think about why the poster would want to include these words (in the context of driving Singaporeans to act kindly).

Clue: “Time to show the world they’re wrong about us.”

Both



Answers for **Secondary 1 (Mathematics)** Learning Resources Preview

**Page 14**

1. 0917
2. 15 pens  
11 notepads  
6 markers

**Page 15**

1. a)  $80 = 2^4 \times 5$   
 $136 = 2^3 \times 17$   
b) 1360  
c) 8  
d) 10

