The following are sample pages from various PACEs in the ACE curriculum, showing a range of subjects from Prep to Year 12.
Literature & Creative Writing PACE 1027

Read Chapter 3 of Summer Fun with Ace and Christi.

An important part of every story is the "characters." The characters are the people in the story.

The main character is the most important person in the story.

After you read Chapter 3, answer these questions in complete sentences.

1. Who is the main character in the story?

2. Where does the story take place?

3. What does Judget do in the story?

4. What shall his prosperous.

Proverbs 28:13

Maths PACE 1017

Draw a line from each number to its box of hundreds, tens, and ones.

212

335

147

Subtract the ones, then the tens, then the hundreds. Take away.

750 - 500 = 250

868 - 418 = 450

456 - 200 = 256

900 - 423 = 477

736 - 232 = 504

589 - 134 = 455

140 - 100 = 40

Science PACE 1030

Birds Have Beaks

The shape of a bird’s beak or bill helps the bird eat its food. Some birds eat seeds. Seeds have a hard, outside coat. Birds that eat seeds need bills or beaks to break open the outside of the seeds. Some fowls eat other animals. These birds need very strong bills or beaks because they eat other animals for food.

Some birds that live in very warm places eat fruit. These birds that eat fruit need big bills. Birds that eat fruit have special tongues to help them eat their meals.

Draw a line under the best answer.

1. The (hair, shape, seed) of a bird’s beak helps him eat food.

2. Birds that eat (seeds, beaks, doeks) need beaks to break them open.

3. Birds need (weak, song, strong) bills to eat other animals.

4. Birds that eat (hard, fruit, coat) need big bills.

5. Birds that eat fruit have special (tongues, feet, arms).

English PACE 1023

Match the words that mean the same.

are not isn’t aren’t aren’t are not

is not isn’t isn’t isn’t isn’t

was not wasn’t wasn’t wasn’t wasn’t

did not didn’t didn’t didn’t didn’t didn’t

do not don’t don’t don’t don’t don’t

has not hasn’t hasn’t hasn’t hasn’t

Write the words that mean the same.

are not aren’t are not aren’t are not

is not isn’t is not isn’t is not

was not wasn’t was not wasn’t was not wasn’t

did not didn’t did not didn’t did not didn’t

do not doesn’t do not doesn’t do not doesn’t do not

has not hasn’t has not hasn’t has not hasn’t

Sometimes we put bird’s words together with an apostrophe.

Is it not It’s eight In’s ten

(10x) 10
Social Studies PACE 1043

The Sahara is in Africa.

This encyclopedia says that much of Africa is desert," said Pastor Gentle. "The Sahara is the largest desert in the world. The Sahara is in the northern part of Africa."

"We sometimes think that it never rains in the desert," said Pastor Gentle. "However, rain falls in the Sahara. Sometimes the Sahara has heavy rains, but the water quickly goes down into the ground.

"There are people who live in the desert and who do not need to move around from place to place to find water," continued Pastor Gentle. "These people live around an oasis. An oasis is like an island of green in the desert."

Fill in the blanks with the right answers.

1. The is the largest desert in the world.

2. The Sahara is in the part of Africa.

3. An is like an island of green in the desert.

4. An oasis is green because it has underground streams of

Maths PACE 1039

2 \div 1 = 6

Think: What number times 2 equals 6?

2 \times 2 = 6

2 \times 2 = 6

So 6 divided by 2 equals 3.

Divide by 1 or 2. Write the correct answer in the boxes.

<table>
<thead>
<tr>
<th>Number</th>
<th>Answer 1</th>
<th>Answer 2</th>
</tr>
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Literature & Creative Writing PACE 1032

Of course not all characters in a story are good. Some stories have a person who causes trouble.

Someone who fights a good hero and tries to defeat him is the hero's enemy.

In the next chapter of Christianity Conquered, you will learn about another Christian hero and his enemies.

Circle "yes" or "no."

1. A story sometimes has an enemy.
   - Yes
   - No

2. An enemy fights against the hero.
   - Yes
   - No

3. The enemy always wins the fight.
   - Yes
   - No

4. An enemy causes trouble.
   - Yes
   - No

5. Jedediah Smith was a famous enemy.
   - Yes
   - No

Read and fill in the blanks.

6. 

from them to _______ it is _______ when it is in the _______ thing to do it.

Proverbs 3:27
Maths PACE 1059

From the word box, choose the correct word(s) to complete the sentence or name the figures. Then write the word(s) in the crossword puzzle on the next page.

ACROSS
1. A ___ figure takes up space and has depth.
2. An angle that forms a square corner is a ___ angle.
3. A parallelogram with four right angles and four congruent sides is a ___.
4. A ___ is a polygon with three sides.
5. An octagon with congruent sides has ___ lines of symmetry.
6. A cylinder has ___ faces.
7. To see how much wire would be needed to make a fence around the chicken pen, we would measure the ___.
8. A cube has ___ faces.
9. To see if Spirit's doghouse has more square feet than Wags' doghouse, we would measure the ___.
10. Volume is measured in ___ units.
11. A ___ figure is the same shape but not the same size as another figure.
12. A polygon with four sides is a ___.

DOWN
1. ___
2. ___
3. ___
4. ___
5. ___
6. ___
7. ___
8. ___
9. ___
10. ___
11. ___
12. ___
13. ___
14. ___
15. ___
16. ___
17. ___
18. ___
19. ___
20. ___
21. [twenty-one]

Science PACE 1052

"Volcanologists have studied volcanoes in order to learn more about the earth. They have learned some things about volcanoes. However, in their studies, they have found that no two volcanoes are exactly alike.

There are, however, three main types of volcanoes. These are active volcanoes, extinct volcanoes, and dormant volcanoes.

Active volcanoes are those which are erupting right now. Extinct volcanoes are thought of as those which have not been active for 1,000 years or more. Dormant volcanoes are those which are only sleeping, but may erupt; however, they are not erupting right now."

Scientists once called Kaimoi in Alaska an extinct volcano. However, on June 6, 1912, in Alaska some strange things began happening. In a small village about 100 miles, or 160 kilometers, away from Kaimoi, a grey cloud hung in the sky during the middle of the day. Almost two hours later, a dark cloud seemed to come down and cover the little village in Alaska. By 5:00 in the evening, the sun could not be seen at all. That was really strange because in that part of the world the sun does not set for 24 hours during that certain time of the year. The villagers were expecting daylight around the clock, but instead there was darkness by 5:00 p.m."

III. Katmai

Fill in the blanks with the right answers.

1. Volcanologists have learned that no two volcanoes are _________.
2. _________.
3. _________.
4. _________.

Social Studies PACE 1058

Read the word and its definition; then underline the sentence which best uses the word.

telegraph - a way of sending coded messages over wires by means of electrical impulses.

(a) In 1877 Perth and Adelaide were able to exchange messages by way of telegraph.
(b) Bill drew a line on the telegraph.

III. UNITED AUSTRALIA: A CHANGE OF THINKING

A dramatic change of thinking occurred by the last decade of the nineteenth century. For most of the 1800s little interest was shown in the idea of a united Australia. The colonies were far more concerned with developing their own settlements and retaining power over their own affairs. By the end of the century this thinking had changed. Many people felt that the federation of the colonies would be good. Earlier barriers to unity seemed to be disappearing.

The colonies were separated by great distances but new developments made it easier for people to travel across the continent. Railway lines were being constructed and the cities were being linked. Many old problems still faced the construction of a national railway. The colonies could not agree on a common gauge (the distance between the rails). Passengers were forced to change trains at the border towns such as Albany on the New South Wales/Victorian border. Progress was being made despite these hiccups.

In 1883 Sydney and Melbourne became the first cities to be linked by rail, in 1887 Adelaide was linked to Melbourne, in 1889 Brisbane was linked to Sydney. Perth had been linked to the other cities by telegraph line since 1877. The people of Sydney had been able to communicate with the people of Melbourne by way of telephone since 1884.

The telegraph line reaches Tasmania in 1890

Thus communications had improved. The colonies knew each other's affairs much more quickly now than had been the case before. Workers moved more easily between the colonies. Cattlemen, sheep-shearers, miners and other workers travelled from colony to colony. Unions and other organizations within the colonies often held conferences around the country. They discussed the conditions of workers in Australia as a whole.

Sporting teams included members from all the colonies. Their success on the field was seen as a victory for Australia and made all Australians proud. The spirit of Australianness

Literature book

TEARIES OF THE SNOW

Patricia St. John

A railway, Melbourne, 1880.
English PACE 1077

Indefinite Pronouns

An indefinite pronoun can be used to refer to a group or to an unspecified number of people, anything, or something. For example:

- each
- every
- some
- any
- some
- one

Example: Each student answered.

Maths PACE 1086

Solve and check the following equations. Reduce all fractions to simplest terms.

\[ 6x - 10 = 27 - 3x \]
\[ 6x + 2x = 27 + 10 \]
\[ 9z + 23 = 18 + 37 - 9 \]
\[ x + 2 = 3 \]
\[ 2x - 13 \]
\[ 2 \times 2 = 20 + 8x - 9 \]

Music PACE 1

The String Family

When the Bible mentions stringed instruments, it is referring to a family of instruments rather than to a specific instrument. Although there were many different kinds of stringed instruments in Bible times, we will look at just four: the harp, the cymbal, the dulcimer, and the psaltery.

Psalm 33:2 and Psalm 92:3. Some people think the cymbal was like today's cymbal, but most music historians believe it was more like a ten-stringed harp.

In Daniel 3:5 the dulcimer is mentioned as one of the instruments in King Nebuchadnezzar's orchestra. A dulcimer is a shallow, clover-like body with a series of wires that a player strikes with small, wooden hammers. Most music historians believe dulcimers are the forerunners of the modern piano.
Science PACE 1089

do not change easily—generally vary little mixing of air occurs between two air masses.
"Air masses are usually moving. The movement of an air mass, in addition to its temperature and humidity, determines the kind of front that forms on its leading edge. When a moving cold air mass overtakes a warmer air mass, a cold front is formed. Cold air masses move at a speed of about 30 miles per hour (48 km/h): which is faster than the movement of warm air masses. Because cold fronts move faster than warm fronts, they cause sharper, more rapid changes in weather. Blizzards, in the form of brief but violent thunderstorms, occur on both sides of the front. Cold air is more dense than warm air and tends to sink, creating high pressure and bringing a period of cooler, sunnier weather as it moves into a region."

Australian History PACE 8

"The victory of the Queensland Shearers’ Union encouraged the Australian Shearers’ Union, which covered the southern colonies. The pastoralists and shipowners were determined to resist the union demands, however, and formed their own unions of employers. The shearers’ strike began in August 1895 when shipowners told the recently formed Marine Officers’ Association that before its wage claims would be discussed, its Victorian members must cut their fees (affiliation) with the Melbourne Trades Hall Council (a trade union organization). The marine officers walked off their ships, the waterfront workers refused to load them, and sailors were laid off when they refused to supply coal to the ships, and pastoralists broke off their negotiations with the shearsers.

The Maritime Strike spread further. Mine owners at Broken Hill locked out their workers, transport workers were brought out on strike by the Labor Defense Committee and gas stations refused to work with coal cut by non-union labor. Allied Deakin, the chief secretary of Victoria, called out the local scientific force to break union pickets at the port of Melbourne. In Sydney, armed police, said by the government of Henry Parkes, cleared a path for wool-carts through a hostile crowd on Circular Quay. By the end of the strike, the Federation of Australia was broken. In the depression of the 1890s, the employers had the upper hand. Further attempts at industrial action by shearsers and mine workers ended in disaster. By 1896, scarcely any in twenty wage-earners belonged to a union. The conflict between the union demand for a closed shop (that is, the employment of only those who belonged to a union), and the employers’ insistence on their right to employ whoever they liked (freedom of contract), had ended with a decisive victory for the latter."

English PACE 1096

Look again at page 28, and complete the following statements.

1. An outline is a step-by-step

2. Before we attempt to write a composition, we should compile an

3. The title of the example outline is

4. The

5. The example outline:

6. Each Roman numeral, capital letter, or number is followed by a

7. The subtopics are indicated under

8. The points are

9. Each line is a complete

10. Because each line is a sentence, each line ends with a

11. When writing an outline, we use one

12. If subtopics or points are used under the main topics, we must have at least

13. Where do you find the meaning of a word?

Science PACE 1101

Etymology PACE 1110

using the root "pulse," "pul," or "pu-" and the meanings and functions of prefixes and suffixes, write the correct word on each line (if you need help, refer to your dictionary).

- (1) to drive or push forward
- (6) to push back or drive back
- (2) to cause something to beat
- (7) tending to push or drive into
- (3) the act of pushing forward
- (8) a beat
- (4) to push out
- (9) to push or drive with force
- (5) a sudden driving force that comes on someone
- (10) something that pushes or drives another thing forward
- (11) what does the root "pulse," "pul," or "pu-" mean?
Physical Science PACE 1120

Although nuclear fission was first used as a weapon, it is also an efficient source of energy to power electric generating plants. One kilogram of uranium fuel may produce as much electric power as 3,000,000 kg of coal or 12,000,000 kg of oil used in a conventional power plant.

A nuclear reactor is a device that allows nuclear fission to proceed at a controlled rate. Reactors today still function much like the first nuclear “pile” in Chicago. The four major parts of a nuclear fission reactor are the core, the moderator, the control rods, and the pressure vessel.

The reactor core contains the uranium fuel needed for fission. Before uranium can be used as fuel, it must be enriched. Uranium-235, which is necessary for fission in a nuclear reactor, always occurs in small quantities mixed with uranium-238. Enrichment is the process that increases the concentration of U-235. Pellets of enriched uranium are placed in steel rods called fuel rods. As many as 300 fuel rods are bound together to form a fuel assembly. Fuel assemblies are held in place by support plates in the core.

A moderator is a substance that slows down neutrons. Neutrons omitted at normal speeds travel too fast to bombard other U-235 nuclei. A moderator, such as graphite, carbon dioxide, or water, slows down the neutrons and increases the chance that they will bombard other U-235 nuclei and continue the fission reaction. Water is used as a moderator in most nuclear fission reactors since it also acts as a coolant and as a heat exchanger.

Control rods are necessary to regulate the rate of the fission reaction. Rods or plates of either cadmium or boron placed between fuel assemblies absorb the emitted neutrons and prevent them from causing other nuclei to split. If the rods are raised, neutrons are released and the reaction proceeds. The higher the rods are raised, the faster the reaction proceeds.

Algebra PACE 1104

Negative Exponents

OBJECTIVE

To eliminate negative exponents from algebraic expressions.

The reciprocal of \( (a/b)^{-n} \) is a number that, when multiplied by \( a/b \), equals 1.

The reciprocal of \( 4/1 \) is \( 1/4 \), because \( 4 \times 1/4 = 1 \).

The reciprocal of \( x/1 \) is \( 1/x \), because \( x \times 1/x = 1 \).

The reciprocal of \( 3/1 \) is \( 1/3 \), because \( 3 \times 1/3 = 1 \).

A negative exponent can be changed to a positive exponent by inverting the base and changing the sign of the exponent.

\[ a^{-n} = \frac{1}{a^n} \]

Exponential expressions with negative exponents must be changed to equivalent expressions with positive exponents before they can be simplified. Study the following examples carefully.

\[ 2x^{-2} = \frac{2x}{x^2} \]
\[ 3(2x)^{-1} = \frac{3}{2x} \]
\[ 5^{-2} = \frac{1}{5^2} = \frac{1}{25} \]

Simplify these expressions after eliminating any negative exponents.

1. \( x^{-2} = \frac{1}{x^2} \)
2. \( 2^{-3} = \frac{1}{2^3} = \frac{1}{8} \)
3. \( -3^{-1} = \frac{-1}{3} \)
4. \( 2^{-2} = \frac{1}{2^2} = \frac{1}{4} \)
5. \( 5^{-1} = \frac{1}{5} \)

Senior Modern History PACE 20

were hung for crimes against British law, there is no evidence that a European was ever hung for killing Aborigines.

GOVERNOR BAILEY'S PROCLAMATION TO THE ABORIGINES

George Augustus Bailey

It was left to another Christian, George Augustus Robinson, to achieve the seemingly impossible. Revisionist historians have branded him a traitor who tricked the Aborigines into surrendering, but it is more likely that he had a genuine interest in their welfare. Certainly, his ideas, although included social equality, justice and Aborigines’ land rights, were well ahead of their time. Robinson, who was on friendly terms with the Tasmanian Aborigines and spoke their language fluently, believed that they could be persuaded to give themselves over to the interest that it was in their own best interests.

His plan was surprisingly successful, and by 1834, most of the surviving Aborigines had been sent, to a place where they could safely pursue their traditional lifestyles, as they thought, but to the descent “remnant” to land off the island’s north- east coast. Although they were generally well-treat- ed, they simply grew away, disillusioned, porn- enes, longing for a past that was gone forever.”

A number of church of England clergy and a Presbyterian minister at- tempted to minister to the Aborigines, but for Robert Clark, appears to have won their genuine affection. Clark’s concentration on Christian teach- ing seems to have made him unpopular with the then Priors Island officials, but at least he stayed with them for life.
Senior Maths PACE 13b

2. The distributor of vegetables uses a conveyor belt to pack turnips into boxes. The vegetables are placed at a point so that they are brought automatically to the conveyor, and then move with a speed of 5 m/s. At the end of the conveyor the vegetables drop into a box. The process is shown in the figure below.

The function to calculate the vertical velocity of a vegetable when it drops into the box is given by:

\[ v = v_i \sin(\theta) = 8.0 \]

The function to calculate the height is given by:

\[ h = -\frac{1}{2} v_i \cos(\theta) t^2 = 4.8t^2 \]

where \( v_i \) initial velocity, i.e. velocity at the drop off at 5 m/s at angle \( \theta \) = time

(a) Tabulate the velocity for \( 0 \leq t \leq 1.10 \) for a time step of 0.10 s.

(b) Tabulate the height, for \( 0 \leq t \leq 1.10 \) for a time step of 0.10 s.

(c) Plot the data from part (a) and (b) on the same graph and interpolate, i.e. connect the points. Use time as vertical velocity and time vs height above the box.

Life of Christ PACE 140

T he mephisto, by keeping the market constantly understocked, by means fully supplying the affected demand, sell their commodities much above the natural prices; and raise their ... wages or profit: ... greatly above their natural rate.

Adam Smith, Wealth of Nations

Physics PACE 1142

A triode

In a triode, electrons emitted from the heated filament pass through holes in the grid before they reach the plate. If voltage is applied to make the grid negative with respect to the filament, some electrons will be repelled back to the filament, thus reducing the flow of electrons to the plate. As the negative charge of the grid is increased, the current passing to the plate is decreased. This decrease in current causes an increase in voltage. Since the grid is closer to the filament than the plate, a small grid voltage has more effect on the electron flow than a much larger plate voltage. Therefore, a small voltage change applied to the input of a triode will result in a much larger voltage change at the output. This effect is known as amplification.

The output voltage of a triode circuit is commonly 50 times larger than the input voltage. If more amplification is needed, the output of the first triode circuit can be connected to a second triode circuit. If both triodes provide an amplification of 50, then the overall amplification will be 50 x 50 = 2500. We can begin to see the importance of Lee De Forest's invention. A radio signal, which has a very tiny voltage, can be received by an antenna and then amplified enough to drive a loudspeaker.

Semiconductor Devices

A semiconductor is a substance intermediate in conductivity between a good insulator and a good conductor. Semiconductors conduct electricity better than true insulators like sulfur, but semiconductors do not conduct electricity as well as true conductors like copper.

Economics PACE 1140

The graph shows the supply and demand curves for lemonade.

Supply and demand schedules for glasses of lemonade for one week

<table>
<thead>
<tr>
<th>Price (cents)</th>
<th>Supply (glasses)</th>
<th>Demand (glasses)</th>
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</thead>
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</table>

The price at which supply and demand are equal.

Equilibrium will continue unless or until some factor affects this balance.

27