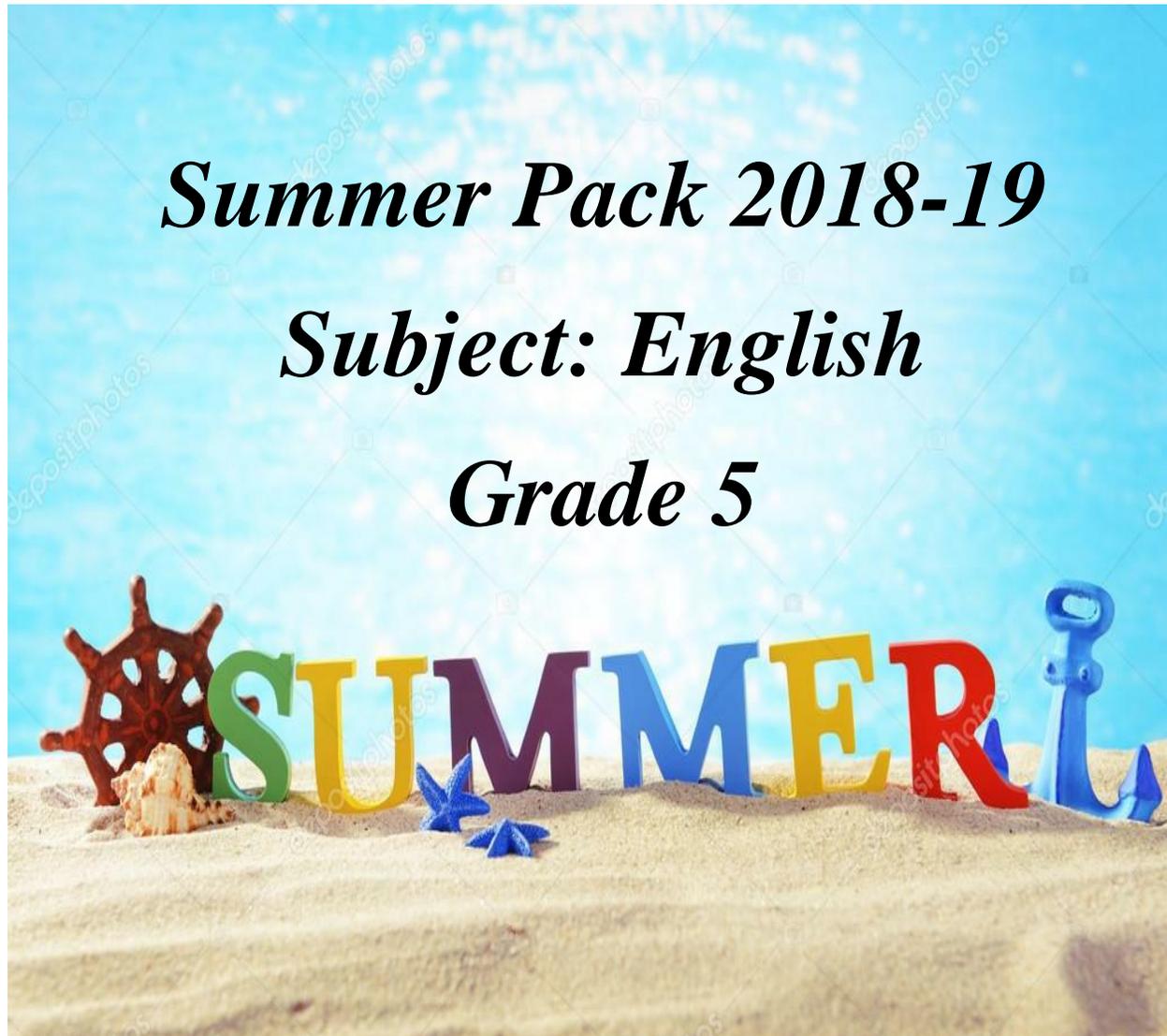




Hira Foundation School
A Division of Jamia Darul Uloom Karachi

HIRA FOUNDATION SCHOOL



Summer Pack 2018-19

Subject: English

Grade 5

Reading Comprehension

Objective sight words (consumption, terrain, integral, orbit, originated, Contemporary, remote); concepts (sustainable, renewable, photovoltaic, Gasification)

Sustainable Energy Sources

What are sustainable energy sources?

Sustainable energy sources are often regarded as including all renewable sources (naturally replenished) such as sunlight, wind, rain, and geothermal heat. Included in this definition is electricity and heat generated from solar, wind, ocean, hydropower, biomass (energy from plants), geothermal (energy from inside the earth), and biofuels and hydrogen derived from renewable resources. These resources usually also include technologies that improve energy efficiency. Fossil fuels are not considered sustainable energy sources because human consumption of fossil fuels creates a decrease in this type of fuel, not a constant or continual growth.

Solar Energy.

The Latin word for sun is “solar” and thus solar energy is a powerful source of energy coming from the sun. For billions of years, the sun has produced energy. It is estimated that the sunlight that shines on the Earth for one hour is capable of meeting the energy demands of the whole world for an entire year! Can you imagine that? Solar energy can be converted into other forms of energy, most commonly heat and electricity. John Herschel, a British astronomer in the 1830s, used a solar collector box to cook his food while on an African expedition exploring differing terrain. Today, people use solar energy as an integral part of their lives and for all sorts of things ranging from heating water in homes to space heating in buildings, from drying farm products to generating electrical energy, and even heating their swimming pools!

Photovoltaics is the process of using solar energy directly to make electricity using specific devices. Electricity can also be produced indirectly from steam generators which use solar thermal collectors in heating a working fluid. How does solar energy actually work? The sun’s light is harnessed by passive solar systems for heating or cooling buildings, flat plate solar collectors, and solar concentrator power systems. The sun’s heat is used to create steam, which then turns a turbine to produce electricity.

The drawbacks to solar energy are the large area required for collection and the manner in which it comes to the surface of the earth. Wind. Wind is classified as sustainable because wind will continually be produced as long as there is the sun shining on the Earth in orbit. Wind is caused by the uneven heating of the earth’s surface by the sun.

Today, wind energy is used to generate electricity. The modern use of wind turbines originated in the 17th century when the Dutch used wind power to recover hundreds of thousands of acres of land by draining the Rhine River Delta. For the next 300 years, this design was used to pump water, grind grain, and to saw wood. Now, through advances in the fields of aerodynamics and composite materials, modern electric power generating turbines was invented. These machines vary in size from as small as one meter to a hundred meters in rotor diameter, and from 100-1000 kilowatts in power output. Wind energy cost is determined by the cost of installing the wind turbine and the amount of energy produced. The use of wind-generated electricity is growing around the world.

Biomass. Organic material which has stored sunlight in the form of chemical energy is considered biomass. This type of fuel includes wood, wood waste, straw, manure, sugar cane, and additional byproducts from a variety of agricultural processes. By undergoing the process of photosynthesis, the chlorophyll in plants with the help of the energy of the sun converts the carbon dioxide from both the water and air from the ground into carbohydrates (complex compounds composed of carbon, hydrogen, and oxygen). When these carbohydrates are burned, they change back into carbon dioxide and water to release the sun's energy. In addition to the typical process of burning, biomass can be changed into liquid fuels or cooked in a process called "gasification" to make combustible gases. Scientists are exploring which crops in these contemporary times are best suited for energy generation. More efficient and cleaner ways to use biomass are also being studied.

Hydropower. Hydropower is a clean, renewable energy source which converts kinetic energy from water (acting as potential energy that is stored) into electricity by turning a turbine. The amount of available energy in water is determined by the flow of the water and the fall of the water. This is one of the oldest sources of harnessing a source of energy by humans. In fact, water wheels were used over 2000 years ago. Electrical power can be generated from the oceans in the forms of tidal power, wave power, ocean thermal conversion, ocean currents, ocean winds, and salinity gradients. Most of these have a disadvantage. Specific to note are the river-based hydroelectric dams that have been known to upset the natural wildlife of the region. Tidal-based hydroelectric plants can cause widespread wildlife problems as the time span between low and high tides is disrupted, and boats are left stranded in low tides.

Geothermal Energy. Geothermal energy, heat from the earth, is used as an efficient heat source in small applications like greenhouses. This heat energy can be found almost anywhere from the dirt in our own backyards to remote wells in countries like Indonesia. In most cases, mineral water is heated from the earth. Using geothermal energy is affordable, sustainable, and a good choice for the environment.

Practice

Language Work

A. Write the words.

consumption _____

integral _____

sustainable _____

renewable _____

photovoltaics _____

gasification _____

B. Use each word in a sentence. Underline the word used.

terrain _____

_____.

orbit _____

_____.

contemporary _____

_____.

remote _____

originated _____

Multiple-Choice Questions

1. What causes wind?

- a. The sudden change in temperature during the day.
- b. The clouds moving in circles in the atmosphere.
- c. The uneven heating of the earth's surface by the sun.
- d. All of the above.

2. According to the text, solar energy is used for all of these reasons except _____.

- a. heat for homes
- b. space heating in buildings
- c. drying of farm products
- d. heating saunas
- e. heating swimming pools

3. According to the text, biomass includes _____.

- a. wood and wood waste
- b. straw, sugar cane and manure
- d. lake, stream and river water
- e. byproducts from agriculture

Smart Words for Spelling

accommodate	embarrass	persuade
accompany	environment	physical
according	equip (-ped, -ment)	prejudice
achieve	especially	privilege
aggressive	exaggerate	profession
amateur	excellent	programme
ancient	existence	pronunciation
apparent	explanation	queue
appreciate	familiar	recognise
attached	foreign	recommend
available	forty	relevant
average	frequently	restaurant
awkward	government	rhyme
bargain	guarantee	rhythm
bruise	harass	sacrifice
category	hindrance	secretary
cemetery	identity	shoulder
committee	immediate(ly)	signature
communicate	individual	sincere(ly)
community	interfere	soldier
competition	interrupt	stomach
conscience*	language	sufficient
conscious*	leisure	suggest
controversy	lightning	symbol
convenience	marvellous	system
correspond	mischievous	temperature
criticise (critic + ise)	muscle	thorough
curiosity	necessary	twelfth
definite	neighbour	variety
desperate	nuisance	vegetable
determined	occupy	vehicle

develop

occur

yacht

dictionary

opportunity

LIST OF IRREGULAR VERBS

When you use a simple past form or a past participle form of a verb, some verbs are regular verbs and some verbs are irregular verbs. If a verb is regular, the past simple and past participle end in **-ed**. But when the past simple and past participle don't end in **-ed**, the verb is irregular. The following verbs are irregular verbs.

Present Form	Past Form	Past Participle Form
awake	awoke	awoken
be	was	been
beat	beat	beat
become	became	become
begin	began	begun
bend	bent	bent
bite	bit	bitten
bleed	bled	bled
blow	blew	blown
break	broke	broken
bring	brought	brought
build	built	built
burn	burnt/burned	burnt/burned
buy	bought	bought
catch	caught	caught
choose	chose	chosen
come	came	come
cost	cost	cost
cut	cut	cut
deal	dealt	dealt
dig	dug	dug
do	did	done

draw	drew	drawn
dream	dreamt/dreamed	dreamt/dreamed
drink	drank	drunk
drive	drove	driven
eat	ate	eaten
fall	fell	fallen
feed	fed	fed
feel	felt	felt
fight	fought	fought
find	found	found
fly	flew	flown
forget	forgot	forgotten
freeze	froze	frozen
get	got	got
give	gave	given
go	went	gone
grow	grew	grown
hang	hung	hung
hang	hanged	hanged
have (got)	had	had
hear	heard	heard
hide	hid	hid
hit	hit	hit
hold	held	held
hurt	hurt	hurt
keep	kept	kept
know	knew	known
lay	laid	laid
lead	led	led
learn	learnt/learned	learnt/learned
leave	left	left

let	let	let
lie	lay	lain
light	lit	lit
lose	lost	lost
make	made	made
mean	meant	meant
meet	met	met
pay	paid	paid
prove	proved	proved/proven
put	put	put
read	read	read
ride	rode	ridden
ring	rang	rung
rise	rose	risen
run	ran	run
say	said	said
see	saw	seen
sell	sold	sold
send	sent	sent
shake	shook	shaken
shine	shone	shone
shoot	shot	shot
show	showed	showed/shown
shut	shut	shut
sing	sang	sung
sit	sat	sat
sleep	slept	slept
smell	smelt/smelled	smelt/smelled
speak	spoke	spoken
spend	spent	spent
stand	stood	stood

Synonyms

S No	Word	Synonym	Synonym
1.	abandon	discard	vacate
2.	accord	agree	grant
3.	adversity	difficulty	misfortune
4.	affluent	plentiful	rich
5.	aggravate	annoy	infuriate
6.	alleviate	lighten	mitigate
7.	amenable	agreeable	favorable
8.	anguish	distress	sorrow
9.	apathetic	dispirited	lifeless
10.	arrogant	disdainful	imperious
11.	astonish	confound	overwhelm
12.	atrocious	appalling	detestable
13.	augment	add	enlarge
14.	avoid	ignore	shun
15.	awkward	graceless	inept
16.	baffle	confuse	deceive
17.	banal	common	plain
18.	barren	desolate	sterile
19.	berate	criticize	disapprove
20.	betray	deceive	fool

