G.C.S.E. PHYSICAL EDUCATION

Unit 2

The Relationship Between Health, Fitness and Physical Activity

FACTORS AFFECTING FITNESS

Name: ..........................................

G.C.S.E. P.E. Teacher: .................................

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FACTORS AFFECTING FITNESS

DIET

(See Health and Diet Booklet)

PHYSIQUE

(See Physique Booklet)

WEIGHT AND HEALTH

Being the wrong weight can lead to health problems. The risk of .................. and .................. Increased for people who are overweight.

Guidelines of weight measure as well as weight to try to take into account the differences in physique.

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<table>
<thead>
<tr>
<th>Height (Metres)</th>
<th>Males Kg</th>
<th>Males Lbs</th>
<th>Females Kg</th>
<th>Females Lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.54</td>
<td>44-57</td>
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<td>1.88</td>
<td>71-88</td>
<td>156-194</td>
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<td>73-90</td>
<td>160-198</td>
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<tr>
<td>1.92</td>
<td>75-93</td>
<td>165-205</td>
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These guidelines are for adults as children are still growing and developing physically.

List the reasons why this sort of table is not a very accurate measure of assessing the relationship between weight and health.

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A more accurate measure comes from measuring percentage body fat and not weight. Body fat should be no more than 20% body weight in adult men and 30% for adult women.

**Task:**
Why would a higher proportion of body fat make women better designed for endurance events?

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**AGE**

As we get older, our bodies slow down so that we can no longer do many of the things we could do when we were younger, or at least not as efficiently.

**Muscles**
As we age, our muscles, including the heart, lose some of their capacity for endurance and effort, so that stamina and strength are reduced. We also become less flexible as we get older.

**Bones**
Bones become brittle with age. This means that they are more prone to injuries such as breaks. Although endurance levels can be maintained fairly effectively with regular activity, the dynamic
strength and the capacity of the body to withstand the impact in contact activities do decline. Reaction speed and limb speed also both reduce.

**Task**
Why might older people want to stay fit?

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**GENDER**

Using page 90 in the OCR GCSE PE book, make notes on the differences in gender.

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DISABILITY

There are many kinds of disability. As we get older we all become less mobile, our eyesight deteriorates and we all become less able at things that we could easily do when we were younger. There are also people who become physically or mentally less able through inherited conditions, illnesses and accidents.

Arthritis is a disability that affects fitness. Arthritis can affect people of any age, although it is more common in older people. Arthritis causes swelling in the joints, which makes movement very painful.

Modern Technology has made it possible for some people who could not previously enjoy and participate in active recreations through disability to take part. Wheelchairs and prostheses (false limbs) have been technologically developed to improve the quality of participation for disabled people.

SMOKING

120,000 people die each year from smoking-related diseases. 450 young people take up smoking every day in the UK. Young people take up smoking everyday in the UK. Young people often think that people only die from smoking when they’re old. However, it is harmful at any age and it has serious consequences for the components of fitness.

Smoking:

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Task
Why do you think many young people are still tempted to take up smoking, despite the clear indications that it is damaging to their health?

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**ALCOHOL**

A small amount of alcohol each week has no negative affect on health, but excessive drinking has very serious consequences for health. Alcohol can also have a negative effect on performance in sport and physical activity.

Alcohol is associated with the relaxing social side of sport, and in moderation it’s an enjoyable aspect of most people’s lives. However, drinking before participating in physical activity can affect co-ordination, balance and agility. There are sports where alcohol has been used to unfair advantage. Its consumption is banned in such sports as fencing, pistol shooting, archery and the modern pentathlon because a small amount of alcohol reduces stress and steadies a shaking hand.
Alcohol is a diuretic drug, which means that it increases the loss of fluid through urination. This leads to an increased risk of dehydration, something which performers wish to void.

Alcohol also slows down reaction time and may lead to an increase in confidence or misguided assessment of a situation. This could lead to performers believing that they are better than they are, often resulting in jury to themselves or another player.

**EATING DISORDERS**

Eating disorders are illnesses that make people binge or starve themselves because of compulsiveness to be thin. Eating disorders have a serious effect on general health and well-being, and they also affect performance in sport.

Using page 93 and 94 in the OCR book complete the table stating the symptoms of the 3 main eating disorders.

<table>
<thead>
<tr>
<th>ANOREXIA NERVOSA</th>
<th>BULIMIA NERVOSA</th>
<th>COMPULSIVE EATING DISORDER</th>
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Sufferers from both anorexia nervosa and bulimia nervosa become obsessed by their weight and their image of themselves. They often take part in vigorous exercise as an attempt to control their weight and improve their image. This is not uncommon in women's sport as there often is an emphasis on body size. Size and shape are seen as not only a reflection of femininity but also as necessary for sporting success. Some sports people use their sporting role as a justification for excessive thinness, for example, gymnastics, long distance running, horseracing, figure skating, dancing and bodybuilding.

**STRESS**

Stress and arousal can act as both motivators and depressors of performance levels. In extreme cases too much stress can seriously reduce the ability of a performer to produce anything like his or her best form, as can over-arousal.

Stress levels can be managed in any of the following ways (see motivation and mental preparation booklet).

- Target setting
- Mental rehearsal
- Verbal reassurance
- Relaxation

**PERFORMANCE ENHANCING DRUGS**

Performance enhancing drugs are drugs that can improve performance. Drugs have been used in sport for many years, as far back as 2000 years ago in the first Olympic Games in Ancient Greece.
Performance enhancing drugs are taken, usually knowingly, with the intention of gaining an unfair advantage over one's opponent. They include:

- Stimulants
- Narcotic analgesics
- Anabolic steroids
- Diuretics
- Other hormones
- Erythropoietin (EPO)
- Beta-blockers

Complete the table using pages 95/96 in the OCR textbook.

<table>
<thead>
<tr>
<th>TYPE OF DRUG</th>
<th>WHY THEY ARE USED</th>
<th>EXAMPLE OF DRUG</th>
<th>SPORTS ASSOCIATED WITH DRUG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stimulant</td>
<td>Used to mask the pain of injury</td>
<td>Amphetamines</td>
<td>All sports</td>
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<tr>
<td>Diuretics</td>
<td>Increase the production of red blood cells which carry O₂ to the muscles</td>
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<td>Weightlifting</td>
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<tr>
<td>Beta-Blockers</td>
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Winterhill Physical Education Department
<table>
<thead>
<tr>
<th>TYPE OF DRUG</th>
<th>WHY IT IS USED</th>
<th>PROCESS INVOLVED</th>
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<td>Blood doping</td>
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HOMEWORK/EXTENSION TASKS

Below are a number of homework tasks. All works should be handed in on time and fully completed. (You may be asked to complete this work on separate sheets of paper in this booklet)

Use this booklet, your text book, the Internet and any other resources to help you research and answer the questions.

1) Explain why athletes may want to increase the oxygen-carrying capacity of their blood?

2) If a professional athlete is banned for life as a result of being found guilty of drug-taking, this means that effectively they are barred from pursuing their profession. Do you think this is right?

3) Why would under eating have a negative affect on performance?

4) Tobacco advertising is now banned or discouraged at some sporting venues. Should this also apply to alcohol?
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<th>Teacher Comment</th>
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<th>Reward</th>
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<td>Student signature on completion</td>
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EXTENSION TASKS

FACTORS AFFECTING FITNESS

TASK 1

Complete Section A

TASK 2

Complete Section B

TASK 3

Complete Section C

TASK 4

Complete Section D
EXTENSION TASKS - FACTORS AFFECTING FITNESS

SECTION A

Short Questions - Circle the correct answers

1) Which of the following are factors which affect fitness?
   a) Diet
   b) Weight
   c) Speed
   d) Gender
   e) Bones

2) Being the wrong weight can lead to which health problems?
   a) Broken leg
   b) High blood pressure
   c) Sprained ankle
   d) Strokes
   e) Risk of heart attack

3) Which of these is not an eating disorder?
   a) Bulimia Nervosa
   b) Eata lota
   c) Anorexia Bulimia
   d) Anorexia Nervosa

4) Which of these are types of performance enhancing drugs?
   a) Stimulants
   b) Anabolic steroids
   c) Amphetamines
   d) Beta - blockers
   e) Paracetomol
   f) Lockets

5) Which of the following is found in tea or coffee?
   a) Ethanol
   b) Heroin
   c) Caffeine
   d) Codeine
6) Age effects the efficiency of our?
   a) Ability to make friends
   b) Muscles
   c) Memory
   d) Eye sight

7) How many people on average die from smoking-related diseases each year?
   a) 20
   b) 200
   c) 1200
   d) 120,000
   e) 200,000
   f) 220,000

8) Stress can seriously reduce the ability of an athlete to produce their best performance. Which of the following is not a way to help manage stress levels?
   a) Verbal reassurance
   b) Mental rehearsal
   c) Visual relaxation
   d) Target setting
   e) Relaxation

SECTION B - ICT TASKS

- Log onto [http://bbc.co.uk/schools/gcsebitesize/pe/](http://bbc.co.uk/schools/gcsebitesize/pe/) - health and fitness - drugs - complete the test.

- Work through the test - check your answers and make notes on anything you got wrong. If you scored under 6 - work through the revision guide to make extra notes.

SECTION C - EXAM QUESTIONS & WORKSHEETS

1) Name five factors which influence participation in sporting activities? (5 marks)
2) Age is an important factor when participating in sporting activities. Give an example of a sport which is suitable for...

1) Young children: ..............................................................................................................................................................

2) Older people: ............................................................................................................................................................... 

3) Families: .........................................................................................................................................................................

And explain why? (6 marks)

3) Why would under eating have a negative effect on performance? (3 marks)
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4) Technological advances with equipment such as fibre glass vaulting poles and better running surfaces, have helped athletes to improve their performance. Over the last few years more and more athletes have been found taking drugs to improve their performance. In light of this discuss:

1) What are the benefits from taking drugs? Give examples taken from sporting events. (5 marks)
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2) What are the disadvantages of taking drugs? (5 marks)
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3) Should there by different punishments for competitors who take performance-enhancing drugs, as opposed to those who take 'social' drugs? (5 marks)
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WORKSHEET 1

What to do

Use the phrases from the statement bank to fill in the spaces in these sentences about the effects of drugs.

1) In .................................. sports smoking can affect the good circulation of the blood around the body and can cause heart problems in later life. It can, however, .................................. and so improve performance in target sports.

2) Alcohol is a .................................. drug. In sufficient quantities it can .................................. and combined with sport can be dangerous.

3) Cannabis is a .................................. And shows reactions down. These effects are of .................................. sportsperson.

4) Ecstasy is a .................................., which can cause hallucinations. It stops a person .................................., so has no use to the sportsperson.

5) LSD is a hallucinogen affecting a .................................. and view of life. It has no use to the ..................................

Statement Bank

- physically demanding
- function properly
- depressant which affects judgement
- calm the nerves
- impair judgement
- no use to the person's judgement
- socially acceptable
- stimulant
- sportsperson

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**Statement Bank**

- physically demanding
- function properly
- depressant which affects judgement
- calm the nerves
- impair judgement
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**Statement Bank**

- physically demanding
- function properly
- depressant which affects judgement
- calm the nerves
- impair judgement
- no use to the person's judgement
- socially acceptable
- stimulant
- sportsperson
1. Choose the best answers below.

a) The list that best describes prohibited classes of substances in sport is:
   i) diuretics, anabolic steroids, beta blockers, stimulants
   ii) opioid analgesics, alcohol, peptide hormones, stimulants
   iii) cannabinoids, diuretics, blood doping, anabolic steroids
   iv) mimetics, opioid analgesics, stimulants, anabolic steroids

b) The statement that best describes the effects of a masking agent is:
   i) used to help the performance of the athlete
   ii) a banned substance hiding the presence of another banned substance
   iii) a legal substance for the sport, hiding the presence of a banned one
   iv) a person employed by the sports person to hide their identity

2. The International Olympic Committee are against athletes using performance enhancing drugs. Why do they, and other athletes, consider it to be wrong to use these banned substances?

3. Select two banned performance-enhancing substances and state the positive effects on performance and the negative on health.
4. Drugs tests are taken after every major competition. List six main phrases of the drugs testing procedure.

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5. Blood doping is a banned method for enhancing performance. How does it work and what are the effects?

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Evaluation and Review

Student Section

Q1. Which sections of the topic did you find difficult? Why?


Q2. Are there any areas that you think you need to work on in the future to understand the topic better?


Teacher Assessment

Effort Grade:
Attainment Grade:
Teacher Comment


Teacher Signature: ________________________________

Date: ________________________________
EXTENSION TASKS

FACTORS AFFECTING FITNESS (2)

TASK 1

Complete Section A

TASK 2

Complete Section B

TASK 3

Complete Section C

TASK 4

Complete Section D
EXTENSION TASKS - FACTORS AFFECTING FITNESS (2)

SECTION A

Short Questions - Circle the correct answers

1) Which of these is not a component of fitness?
   a) Speed  
   b) Muscular Endurance  
   c) Flexibility  
   d) Agility  
   e) Cardio Vascular Endurance  
   f) Strength

2) Which of these is not a skill related component of fitness?
   a) Balance  
   b) Co-ordination  
   c) Agility  
   d) Cardio Vascular Endurance  
   e) Speed of Reaction  
   f) Timing

3) General or Health related fitness is defined as?
   a) You are fit and able to perform particular skills.  
   b) You are able to get out of bed in the morning.  
   c) The ability of your body to cope with the demands of everyday life.  
   d) You can run one mile in under four minutes.

4) Skill-related or specific fitness is defined as?
   a) You are fit and able to perform particular skills.  
   b) You are able to get out of bed in the morning.  
   c) The ability of your body to cope with the demands of everyday life.  
   d) You can run one mile in under four minutes.

5) An exercise programme should include what?
   a) Conditioning/skill phase  
   b) Warm up  
   c) Observation  
   d) Cool down
6) Match the Training Principle with the definition?

<table>
<thead>
<tr>
<th>Overload</th>
<th>Activities should be geared towards moving from general aims to specific targets or objectives within a specified time frame.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specificity</td>
<td>Working the body beyond its current known limits.</td>
</tr>
<tr>
<td>Progression</td>
<td>Being in the best condition for your activity at the right time.</td>
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<tr>
<td>Reversibility</td>
<td>Effects of training will be lost at about one third of the rate at which they were gained.</td>
</tr>
<tr>
<td>Peaking</td>
<td>For training to be most effective it must be specific to the activity for which it is intended.</td>
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7) Which of these are Training Methods?

a) Circuit training  
b) Weight training  
c) Cross training  
d) Interval training  
e) Versa training  
f) Fartlek training

8) Exercise as long term effects on?

a) Breathing  
b) Heart  
c) Height  
d) Rate of recovery  
e) Number of muscles in the body

9) In the FITT principle of training, F stands for?

a) Full  
b) Fast  
c) Frequency  
d) Fitness
SECTION B - ICT TASKS

- Log on to http://www.s.cool.co.uk - personal factors that affect participation in sport - try some questions - exam style questions.
- Work through questions 1, 2 & 3 - check your answers and make notes on anything you got wrong.

- Log on to http://www.s.cool.co.uk - training for sport - try some questions - exam style questions.
- Work through questions 1, 2 & 3 - check your answers and make notes on anything you got wrong.

SECTION C - EXAM QUESTIONS & WORKSHEETS

1) Explain how you would apply the principle of overload to an exercise programme? (4 marks)

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2) Why is progression a very important component in any exercise programme? (4 marks)

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3) Describe how the use of fitness tests can be used to plan and evaluate an Individual's training programme? (6 marks)

4) Give two disadvantages of using Fartlek training? (2 marks)

5) List the five components of health-related fitness? (5 marks)

6) a) Give three examples of skill-related fitness taken from sporting activities? (6 marks)

    b) Give four examples which might indicate a person’s lack of fitness? (4 marks)

7) What is meant by flexibility? Describe one test for flexibility? (4 marks)
WORKSHEET 1

What to do

1) For each of the sports pictured below, list the three most important components of skill related fitness from the list in the box below.

2) Link each definition with the correct component of skill related fitness from the box.

Definitions

a) The ability to apply a combination of strength and speed in an action ........................................

b) The ability to change direction quickly and still keep control of the whole body ...............................  

c) The ability to keep the body stable whether still, moving or in a different shape by keeping the centre of gravity over the base ........................................

d) The time it takes to respond to a stimulus ........................................

e) The fastest rate a person can complete a task or cover a distance ........................................

f) The ability to use two parts of the body at the same time ........................................

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<thead>
<tr>
<th>Components</th>
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<tr>
<td>Balance</td>
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<td>Co-ordination</td>
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What to do

Look at the list of statements about principles of training. Each one fits under a principle heading. Write the correct heading after each statement.

Headings

Specificity
Overload
Progression
Reversibility

Statements

a) Muscular strength is improved in the same way the muscles are used in the game/event ........................................

b) The exercise is performed above the threshold of training ........................................

c) Further training has to be planned ........................................

d) Exercise matches the actions of the sport ........................................

e) Effects of training are lost three times faster than any gain made ........................................

f) After six weeks training changes to become harder ........................................

g) Exercise becomes more intense by increasing the frequency, intensity and time ........................................

h) Changes made to the programme are gradual to avoid injury ........................................

i) Injury or illness can stop training and so the athlete loses fitness ........................................

j) Training is at the pace of a competitive game ........................................

k) If training stops, muscles atrophy ........................................

l) Body works harder than normal ........................................
WORKSHEET 3

What to do

1) Answer the following questions. Give short answers. Use the textbook to help.

   a. What does the F in FITT stand for? .................................
   b. What does the I in FITT stand for? .................................
   c. What does the first T in FITT stand for? ..........................
   d. What does the second T in FITT stand for? ........................
   e. Which principle tells us that the training exercise should match the sporting action? ........................
   f. If a person usually trains three times per week but changes to training four times, which letter of FITT is affected? ........................
   g. What does the word 'overload' mean to the person training? ........................
   h. At what percentage of the maximum should a person train to apply the principle of overload? ........................

2) Fill in the gaps in these sentences about reaching levels of fitness.

   a. A person must train ................... times a week.
   b. Training should last for at least ................... minutes.
   c. The heart rate should rise to between ................... of the maximum heart rate.
   d. To reach higher levels of fitness the athlete must train harder. A top-class athlete should train ................... of their maximum to reach a performance to suit the level of competition.
   e. Systematic programming is a planned change to the sessions applying the principle of ................... .
   f. Reversibility happens when training stops and the muscles ................... .
   g. Getting the right balance in the amount of training is called ................... .
WORKSHEET 4

What to do

Read the paragraphs below. Fill in the gaps with the words from the statement bank. Each word is used once.

Specificity

This principle relies on the activity ........................................................................ the actions used in the game. They must be performed in the .................................. and at the .................................. as the competition. If the skills are practised too slowly then only .................................. will be reproduced. For specific skilled activities like cycling there is .................................. activity for the competitor.

Overload

When the body is worked ........................................, this is overload. The extra workload must reach the .................................................. which is above 60 per cent of the maximum heart rate. The .................................................. principle applies to overload. The initials stand for frequency, intensity, time and type. How often a training session is done relates to ................................. . .................................................. the activity is concerns the intensity. The ................................. is to do with time. The activity performed is linked with ................................. .

Progression

By regularly performing the training session the body will ................................. . When this happens the session needs to be made more ................................. on the athlete. By ........................................ the athlete at the beginning of the programme and then five or six weeks later, changes the body has made can be recorded. The session can be ................................. to add the necessary changes. This will include small differences to the FITT principles.

Reversibility

When ................................. the effects of exercise are lost. The muscles begin to ................................., losing their ................................. . It takes ................................. to lose fitness than gain it.

Statement Bank

more than usual

length of the session

testing

NO SUBSTITUTE

same way

threshold of training

atrophy

shape and tone

demanding

training steps

actions at that place

improve and adjust

improve

speed

same

systematically planned

match

FITT

WORDS SECTION

SECTION D – KEY
<table>
<thead>
<tr>
<th>WORD</th>
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<tbody>
<tr>
<td>1) Cardiovascular Endurance</td>
<td>(Aerobic fitness)</td>
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<td>2) Muscular Endurance</td>
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<td>3) Stamina</td>
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<td>4) Strength</td>
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<td>5) Flexibility/Suppleness</td>
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<td>6) Speed</td>
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<td>7) General Fitness</td>
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<td>8) Explosive Strength (Power)</td>
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<td>9) Agility</td>
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<td>10) Balance</td>
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<td>11) Coordination</td>
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<td>12) Fast Reactions</td>
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**ADDITIONAL NOTES**
Student Section

Q1. Which sections of the topic did you find difficult? Why?

Q2. Are there any areas that you think you need to work on in the future to understand the topic better?

Teacher Assessment

Effort Grade: 
Attainment Grade: 
Teacher Comment

Teacher Signature: ______________________________

Date: ______________________________