THE ROYAL NAVY and ROYAL MARINES

ACTION FITNESS

HEALTH RELATED ACTIVITY

STUDENT WORKSHEETS

DO YOU HAVE THE STRENGTH OF MIND TO BE A ROYAL MARINES COMMANDO?
Warm up and stretch further

The “sit and reach test” measures lower back and hamstring flexibility.

Record your sit and reach score (centimetre) in this table:

<table>
<thead>
<tr>
<th></th>
<th>Before warm up</th>
<th>After pulse raising</th>
<th>After pulse raising and mobilising</th>
<th>After cool down</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>C</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Did you know that:

1. You are generally flexible if you can touch your toes when you are sitting down with straight legs.
2. More flexibility is required to perform effectively and avoid injury in most sports and dances.
3. Over 80,000 adults miss work each day because of back problems which is thought to be a result of poor posture, weak stomach and back muscles, and poor flexibility.
Student Worksheet 2

Warming up your muscles and joints

Key point
Work from head down to toes

Your task
1. Warm up first (pulse raise), then undertake this task with a partner.
2. Use your knowledge to complete 2 mobilising and 2 stretching exercises for each body part outlined above.
3. Record these in the boxes on your sheet.
4. Make sure that you stay warm between each mobilising and stretching exercise.

Name __________________________
Form __________________________
**Student Worksheet 3**

**Exercise to the heartbeat** – for a healthy heart, raise your heart rate into the heart zone for 20 minutes daily.

**Taking your pulse**
1. Locate your pulse
2. Count your pulse for 15 seconds then convert to beats per minute using the table below right
3. Record your beats per minute pulse rate in the right-hand table

<table>
<thead>
<tr>
<th>Name</th>
<th>Power walking</th>
<th>Skipping</th>
<th>Running</th>
<th>Cool-down</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

**Heart rate conversion table**

<table>
<thead>
<tr>
<th>Heart rate conversion table</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
</tr>
<tr>
<td>12</td>
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<tr>
<td>13</td>
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<td>17</td>
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<tr>
<td>18</td>
</tr>
<tr>
<td>19</td>
</tr>
<tr>
<td>20</td>
</tr>
</tbody>
</table>

Heart beats in 15 seconds (white column) are converted into beats per minute scores (shaded column).

**Plot your heart rates on the graph below**

- **Sprinting**
- **Running**
- **Jogging**
- **Walking**
- **Standing**
- **Sitting**
- **Lying**

**Healthy Heart Zone:**

- Maximum heart rate = 220 minus your age
- Base heart rate = heart whilst asleep

**Can you describe what happens to the heart rate during different types of exercise? Why may your heart rate differ to your partner(s)?**

**Did you know that:**
1. 175,000 people die each year from heart attacks
2. Exercise makes your heart muscle stronger
Choosing the best exercises for heart health

HEART RATE CONVERSION TABLE
Convert heart rate from beats per 15 seconds to beats per minute
Plain section – beats per 15 seconds
Shaded section – beats per minute

<table>
<thead>
<tr>
<th>Plain section</th>
<th>Shaded section</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 44 21 84 31 124 41 164</td>
<td>12 48 22 88 32 128 42 168</td>
</tr>
<tr>
<td>13 52 23 92 33 132 43 172</td>
<td>14 56 24 96 34 136 44 176</td>
</tr>
<tr>
<td>15 60 25 100 35 140 45 180</td>
<td>16 64 26 104 36 144 46 184</td>
</tr>
<tr>
<td>17 68 27 108 37 148 47 188</td>
<td>18 72 28 112 38 152 48 192</td>
</tr>
<tr>
<td>19 76 29 116 39 156 49 196</td>
<td>20 80 30 120 40 160 50 200</td>
</tr>
</tbody>
</table>

A healthy heart task
1. Choose 8-10 activities to do with a partner
2. List these in order as you go along
3. Record your heart rate for 15 seconds at the end of each activity
4. Use your table to put the result in heartbeats per minute into the box next to the exercise
5. Use the RPE table in the third column to score how hard you felt the exercise was

Exercise Heart rate RPE

Use the Rating of Perceived Exertion table to estimate how hard the exercise was. Lying down relaxing would equate to RPE of 6, whereas exercise causing total exhaustion would equate to an RPE of 19-20.

Borg’s Ratings of Perceived Exertion scale

<table>
<thead>
<tr>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO EXERTION AT ALL</td>
<td>EXTREMELY LIGHT</td>
<td>EXTREMELY LIGHT</td>
<td>VERY LIGHT</td>
<td>LIGHT</td>
<td>SOMEWHAT HARD</td>
<td>HARD (HEAVY)</td>
<td>VERY HARD</td>
<td>EXTREMELY HARD</td>
<td>MAXIMAL EXERTION</td>
<td></td>
<td></td>
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</table>

1. Which exercises could you keep going for 90 seconds?
2. What do you notice about your heart rate after you have finished a leg exercise compared to an arm or trunk exercise?
3. If you wanted to keep your heart rate in the healthy zone for 20 minutes, what sort of exercises would you choose to do?
Healthy muscles mean movement for life – for healthy muscles do 8 to 10 muscle exercises twice a week.

Under each exercise write down the major muscle group being exercised.

### Exercises

<table>
<thead>
<tr>
<th>Work : rest</th>
<th>Work : rest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit 1</td>
<td>Circuit 2</td>
</tr>
</tbody>
</table>
- Step ups
- Sit ups
- Press ups
- Half squats
- Body extension
- Pull ups

**Did you know that:**
1. There are over 600 muscles in the body.
2. The leg muscles are the largest and use most energy.
3. The majority of adults over the age of 50 do not have enough leg strength to get out of a chair unassisted.
4. Back pain is attributed to weak back and stomach muscles.

**Name**

**Form**
Decision making for muscle health. What do I need to do?

Select a maximum of 5 buttons

**The FITT Principle**

- **F**requency: how many exercise sessions per week
- **I**ntensity: how hard are the exercise sessions
- **T**ime: how long will the exercises or exercise session last
- **T**ype: is it circuit training, step aerobics, flexibility training, weight training, running, walking etc.

**A needs assessment**

This is your chance to quickly decide what you require from today's exercise session.

For example, an aerobic type circuit should include a lot of leg exercises and slow easy repetitions on other exercises.

A recovery circuit should generally be of low intensity compared to an assessment circuit which should be a maximum effort, aiming for a personal best.

Before warming up, write your aims (buttons) for your exercise session here:

<table>
<thead>
<tr>
<th>Exercises</th>
<th>work</th>
<th>rest</th>
<th>work</th>
<th>rest</th>
<th>work</th>
<th>rest</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

What are your plans for next week?

Name __________________________
Form __________________________
**Student Worksheet 7**

The calorie burn. Using exercise to use energy.

**Food Intake** Calories in

<table>
<thead>
<tr>
<th>Food Weight (gms.)</th>
<th>Kcals/gm</th>
<th>Kcals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crisps (30g = 1 bag)</td>
<td>X 5</td>
<td>150</td>
</tr>
<tr>
<td>X</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>=</td>
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<td>=</td>
<td></td>
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<tr>
<td>X</td>
<td>=</td>
<td></td>
</tr>
</tbody>
</table>

(A) = total Kcal intake

**Did you know that:**

1 lb of fat = 3500 Kcals
1 mile (walk/run) uses 100 Kcals
1 mile per day for a year = 10lbs of fat

**The Energy Balance**

- **Maintain body weight**
- **Increase body weight**
- **Decrease body weight**

**Physical Activity** Calories out

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Kcals burnt per repetition</th>
<th>Number of repetitions</th>
<th>Kcals burnt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sit ups</td>
<td>1 X 30</td>
<td>= 30</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>=</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>=</td>
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<tr>
<td>X</td>
<td>=</td>
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</tbody>
</table>

(B) = total Kcal used

For a better estimation of Kcal used

\[ Kcals \text{ used} = \frac{(B) \times \text{body weight}}{100} \]

Name

Form
Exercise, stress and relaxation – relax each day and throw your cares away.

Your task
Before you start your warm up measure your pulse for 15 seconds and record it here

Now warm up with a partner

30 jumping jacks
Measure 15 second pulse
Lie down immediately on a mat
Concentrate on slowing your heart down, close your eyes and breath deeply and slowly
Measure 15 second pulse
Repeat the above if there is time

Tension release led by your teacher
Lie on a mat.
20 supine hip raises
Then relax your back using the hedgehog sleep

Power walk/jog for 3 minutes
Lie down on a mat
Slow down your heart rate
Listen to quiet music
Listen to a relaxation story from your teacher

Stress reducers
Desk relaxation
Pour your troubles away

Floating on a cloud
Hedgehog sleep

Power walk/jog for 3 minutes
Lie down on a mat
Slow down your heart rate
Listen to quiet music
Listen to a relaxation story from your teacher

Planning your relaxation
Learning from some of the stress reducing principles covered in this lesson, develop a weekly plan of relaxation using a range of techniques

RELAXATION DIARY

<table>
<thead>
<tr>
<th>Time of day</th>
<th>Technique</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
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<td>Thurs</td>
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<tr>
<td>Fri</td>
<td></td>
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<tr>
<td>Sat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun</td>
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</tr>
</tbody>
</table>

This is especially important during periods of high stress such as during examinations, interviews etc.

Name

Form
Testing your health and skill related fitness – for the majority of the tests you should work with a partner. One should complete the tests whilst the other scores and records the result.

What do your results mean?
Compare your results against expected results
Compare your results against others in your class
Discuss with your partner how you may improve your weaknesses and maintain your strengths

What sport/activity do you think your fitness results are best suited to?
(for example if you have excellent scores in flexibility, vertical jump and 3 second sprint you may be suited to long jumping)

Best sport(s)
1
2
3

Name
Form
**Training for aerobic fitness** – aerobic fitness is a measure of the heart and lungs to supply oxygen to, and remove carbon dioxide from, the working muscles for an extended period of time. Aerobic training improves this system.

**Work with a partner**

**Your task**

1. Make sure that you warm up properly around the marked area. Mobilise on diagonally opposite corners. Stretch on the other two corners.
2. Slow running (steady state work – jog around area A for 10 minutes talking to your partner.)
3. Fartlek running (varying speed – use area B to walk, jog, run and sprint short sections of the pitch, be careful NOT to run into areas A or C).
4. Interval training. Use the lane marked in area C to stride two sets of three reps of 80-100 metres. Walk back to the start after each run.

**Thinking about aerobic fitness**

Why do these three types of training improve your aerobic fitness (endurance)?

Which type of training do you think is most suited for playing games such as rugby/netball?

Discuss with your partner how you might slightly change these types of training to provide some variety or to suit certain sports.

Name ____________________________

Form ____________________________