Developing Gliding Club Partnerships with Schools and Colleges

This pack has been designed to support BGA gliding clubs develop partnerships with schools and colleges.

It has been structured as a brief set of guidelines (or steps) describing the key actions needed to forge these relationships, plus a number of Appendices giving supporting material:

- Guidelines
- Appendix 1: Requirements for clubs to become a Junior Gliding Centre (JGC)
- Appendix 2: Local Authority Requirements to Work with Gliding Clubs
- Appendix 3: Risk Assessments
- Appendix 4: BGA Guidelines for Mentoring Junior Pilots
- Appendix 5: STEM Work Booklet
- Appendix 6: Examples of Good Practice
- Appendix 7: Example Partnership Agreement

Developing Gliding Club Partnerships with Schools and Colleges Guidance Notes

1. Gain BGA Junior Gliding Centre status (JGC). Information about achieving this is provided in
    a. Appendix 1 in this pack (requirements to become a JGC)
    b. The junior gliding web site www.juniorgliding.co.uk (follow links to Resources)
    c. Liaise with Liz Pike (lizzie@gliding.co.uk) at the BGA office
2. Identify whether there is local authority support in your area for gliding activities. (Note that gliding will be listed as a hazardous pursuit. However, some local authorities such as Hampshire local authority for example DO support young people to glide providing all the correct paperwork and insurances are in place.)
3. See appendix 2 in this pack for guidelines when working with local authorities.
4. Your club should agree junior rates that clearly identify winch, aero tow, membership and soaring fees. Cost will be a major factor in the decision making of schools and colleges to participate.
5. Identify a single point of contact to liaise with local schools and colleges, preferably DBS checked.
6. All instructors who fly with students should be DBS checked and child protection training given.
7. Club risk assessments should be in place and current.
    a. A generic risk assessment example is given in appendix 3, along with a completed actual example
8. Health and Safety, and Equality and Diversity policies need to be in place.
    a. These are also required to gain JGC status.
    b. Generic policies are available through the BGA website.
9. It is good practice to have a mentoring scheme in place.
    a. See appendix 4 for more information and guidelines
10. Agree as a club what product you are going to offer. For example:
    a. Links with the school curriculum such as maths, physics and engineering. An example of linking with STEM (Science, Technology, Engineering, Maths) curriculum through gliding activity is given at appendix 5
    b. Air Experience.
    c. Links with sport, e.g. BTEC practical individual sport.
11. Ideally the club should be insured for a minimum of £5,000,000 public liability. Contact Liz at the BGA office for more information.
12. Prepare logbook or card system to track attainment.
13. Identify capacity. Do not oversell and under-deliver.
14. Promote enjoyment in a safe environment.
15. Further information regarding good practice can be found at Appendix 6
16. Additional support if required can be given by the BGA Schools and Colleges lead, Yvonne Elliott: yhelliott@btinternet.com

Appendix 1

Club Requirements for BGA Junior Gliding Centres (JGCs)

	The Flying Programme	BGA Requirements and/or source	JGC requirements Resources - required	Related BGA System(s)
1	***Club sessions***			
I	The instructors responsible for the programme are suitably qualified to BGA specified standards.	All coaches (Instructors) hold a current BGA rating		◦ Senior Regional Examiner & National Coach structure
II	The instructors responsible for the programme hold professional indemnity and/or public liability insurance.	◦ Glider insurance policies (as required by BGA Laws and Rules) ◦ Club holds appropriate public liability insurance ◦ Supported with BGA managed top up contingency policy	◦ Copies of insurance certificates	◦ BGA managed top up contingency policy
III	All instruction and competition takes place at safe venues and uses safe equipment.	◦ All coaching and instruction takes place in airworthy aircraft ◦ Activities (airborne and ground) are subject to BGA operational regulations and risk assessments		◦ Relevant BGA sub-Committees and regional support networks: Safety; Technical; Instructor;

	The flying programme	BGA requirements and/or source	JGC requirements Resources - required	Related BGA System(s)
2	***Duty of care and child protection***			
I	The club has receipt of the BGA child protection policy and is working towards the procedures laid down (these will cover issues like CRB checks, sports specific guidance on contact issues).	◦ Copy of club's child protection policy or statement, signed to show adopted ◦ CRB certificates checked and dated	◦ Copy of club's child protection policy or statement, signed to show adopted Resource: Child protection policy for: - England & Wales - Scotland - Northern Ireland	BGA CP Lead & BGA Office
II	At least one member of the club has attended child protection training. If two or more have, one should be an instructor.	◦ Attendance of BGA CP training preferable as it is sport specific (BGA keeps records of attendance)	If not BGA training, generic CP training is fine. Copies of certificates of attendance required	BGA CP Lead & BGA Office
III	The club has adopted codes of conduct for all instructors, officials and volunteers working with children and young people.	◦ Codes of conduct documents published within club as clear terms of reference	Codes of conduct in word – for amendment to suit local requirements Resource: code of conduct for club adults	
IV	The club has access to first aid equipment at all coaching and competition sessions.	◦ As per emergency procedures	Description of where First Aid kits are stored and access to them	

V	The club has emergency procedures for dealing with serious injuries/accidents, including ensuring contact through telephone/ radio to emergency services.	◦ Copy of club's procedures ◦ Details of how communicated to club personnel ◦ Copy of facility procedures if different from clubs ◦ Ensure links between club and facility procedures		BGA Site Operations Manual sets out emergency procedures (best practise)
VI	The club has the contact details of parents/carers and emergency/alternative contacts.	◦ Club database ◦ Membership forms ◦ Details of how information collected and who has access to it	BGA Membership forms in use Resource: BGA Full membership form BGA Temporary membership form	
VII	The club has information on any medical conditions of its junior members and informs coaches on a need to know basis.	◦ Club database ◦ Membership forms ◦ Details of how information collected and who has access to it.	How is information stored and transferred to those who need to know?	

	The flying programme	JGC requirements and source of resources	JGC requirements Resources - required	Remarks
3	***Sports equity and ethics***			
I	The club has an open/non-discriminatory constitution.	◦ Copy of club governing document which must be signed and dated ◦ Governing document contains statement in relation to open membership		Recommend BWB CASC model if required
II	The club has adopted an equal opportunities/sports equity policy.	◦ Copy of Equity policy or statement ◦ Details of how communicated to club personnel ◦ Other documents which refer to policy ◦ Copy of committee minutes adopting policy ◦ Policy signed and dated by club chairperson and other relevant officials	Resource: Club Equity & Equal Opportunities Policy	
III	The club has a set of rules for junior members.	◦ Copy of junior codes of conduct ◦ Details of how communicated to parents/carers ◦ Copy of committee minutes adopting codes	Resource: code of conduct for juniors code of conduct for parents / carers	

	The flying programme	JGC requirements and source of resources	JGC requirements Resources - required	Related BGA System(s)
4	***Club management***			
I	The club is affiliated to the BGA.			
II	The club has public liability insurance (as section 1.II)	◦ Copy of current Certificate of liability ◦ Declaration		
III	The club has a specific membership category and pricing policy for junior members	◦ Relevant club documentation ◦ Membership forms – BGA membership forms in operation Link Link ◦ Copy of tariff		
IV	The club communicates regularly with parents/carers.	◦ How does communication happen?		
V	The club has a junior/ volunteer coordinator to act as a liaison with the local ATC unit(s) and other relevant organisations	◦ Contact details supplied ◦ Permission to circulate contact details (email address at least)		BGA Junior Gliding Administrator in Office

Appendix 2

Local Authority Requirements to Work with Gliding Clubs

1. **Safe Recruitment Procedures**

- Are DBS checks in place for all instructors working with young people?
- Is there a Child Protection Policy in place, including reporting procedures?
- Are all instructors BGA approved? (you may need to share their licence numbers)
- Are instructors observed instructing before licence achieved?

2. **Risk Management and Operating Procedures.**

- Are all activities that young people will participate in risk assessed?
- Are there operational procedures in place?
- Is there a service level agreement in place between club and educational establishment? An example SLA is provided at Appendix 7)
- Do you have public liability insurance cover?
  (Suggested amount £5-10million)

3. **Instructor Qualifications and Ongoing Monitoring.**

- Are all instructor qualifications current with records kept?
- Is there a systematic method of monitoring instructors?
- Are all instructors observing the same operational procedures?
- Are those carrying out the monitoring trained for the role?
- Do all instructors receive an induction on child protection and operating procedures at the club?

4. **Equipment Safety.**

- Is there a schedule for the safety checking of all equipment?
- Are personnel trained for checking the equipment?
- Are the checks recorded? (You may be required to supply records for gliders and tugs)

5. **Supervision**

- Are there clear roles for club personnel when working with young people?
- Are there clear guidelines regarding first aid?
- Is there at least one club member present during the youth flying that holds a first aid certificate? (Minimum one day emergency training approved by HSE)
- Does the service level agreement clarify pastoral care responsibilities? (The school/college should hold this responsibility)
- Is a register/log kept of all activities?
- Are there clear procedures in place for an emergency situation and are the instructors aware of these procedures?

6. **Finance and Contracts.**

- Have you agreed costs for the activities?
- Have objectives and standards of behaviour been agreed?

Appendix 3

Risk Assessments

There are two parts to this appendix. The first provides a generic risk assessment which can be tailored by individual clubs to meet their specific circumstances; the second is a real-life example developed by Portsmouth Naval GC to support their partnership with Fareham College.

British Gliding Association **General Hazard and Risk Assessment**

Gliding Club …… Assessor's Name …… Process/Activity ……..

Airfield ……. Date ……

Associated Hazard – Harm Potential	Persons at Risk				Existing Control Measures which reduce the risk	Factors which increase the risk	Severity x Frequency = Risk Rating
	S	V	ST	C			
Injury requiring first aid					Trained first aiders on site First aid equipment available and instructors trained in its use	Lack of trained first aiders and first aid equipment	1 x 1 = 1
Behaviour group control/airfield safety					All student pilots are briefed on acceptable behaviour, Clear line of management and authority identified All Instructors working with young people are DBS checked. Constant supervision in place	Briefing not given. Behaviour not monitored or poor behaviour not dealt with.	1 x 1 = 1
Weather conditions					CFI and/or duty instructor read synoptic chart and weather forecast for the day. Confirmation of flying approved, level of competence for the prevailing conditions agreed.	Failure to check weather forecast and respond accordingly. Weather conditions not monitored during the flying day.	3 x 1 = 3
Gliding accident					All gliding instructors are BGA approved instructors. Regular training is in place to support safety in gliding. NB There have been no serious incidents involving student pilots since 2006.	BGA rules and regulations not adhered to.	4 x 1 = 4
Student medical status					All students to complete medical questionnaire. If under 18 to be signed by parent/carer	Medical form not completed or medical issues considered	2 x 1 = 2

(Continue on separate form if further hazards are identified)

Key sources of information/legislation, Approved Codes of Practice, Guidance Notes, etc	**Severity**	**Frequency**
	1. No injury 2. Minor injury 3. Major injury 4. Fatality	1. Unlikely 2. Possible 3. Probable 4. Certain

S = Staff V = Visitors ST = Students C = Contractor

Where the 'Risk Rating is three or more then control measures must be in place and new control measures should be considered and introduced as necessary.

The following proposals provide at least two options (a, b, etc) that should be considered and introduced if appropriate.

ACTION PLAN

Hazard item number (from overleaf)	New Control Measure (Option a, b)	Action Agreed Y/N	Date Introduced	Health Surveillance Required Y/N	Review Date
1.a					
b.					
2.a					
b.					
3.a					
b.					
4.a					
b.					
5.a					
b.					

Notes

Declaration
Providing the control measures are complied with, I consider the risks identified are acceptable

Assessor's signature ……..…. Date …….

Curriculum Manager/ Section Head signature ……. Date …….

CEMAST

Fareham College

Pa ege group

GENERAL RISK ASSESSMENT FORM		
DATE: **6th November 2014**	**ASSESSORS:** **Steve Dingsdale**	**ASSESSMENT NUMBER:**
ACTIVITY: **Gliding**	**LOCATION:** **CEMAST**	**REVIEW:**

GENERAL INFORMATION

CEMAST Staff and Students participating in gliding activities at Portsmouth Naval Gliding Centre, Lee on Solent.

Parental Approval for participation in Gliding.,
Procedures and processes identified in The PNGC Rule Book. Home Office' Disclosure & Barring Service' clearance checks where appropriate.
Anti-bullying & abuse policy document
PNGC Youth policy document
Comprehensive Risk Assessment

Activity	Hazard	People At Risk	Current Controls	Severity	Likelihood	Risk Rating	Action Rating

Ground Vehicles (Tractors/Cars)	Driving of vehicles poses a risk of conflicting with aircraft and airfield operations, potentially causing injury to drivers, passengers and pilots along with damage to equipment.	Students & Staff	Students and Staff using airfield vehicles are fully briefed in their correct use and supervised until deemed proficient (by qualified Supervisors to operate the vehicles alone. Students and Staff have a book with all club rules, air laws and operations all members are advised to read it, members will have briefings and training which uses all the information from it.	4	3	12	8
Movement around airfield	Individuals moving around the airfield may be injured by gliders, vehicles, cables and other equipment.	Students & Staff	All are briefed on safe movement, especially with regards to the location of landing area and cables. Inexperienced members are escorted. Clear areas where inexperienced can enter. A buddy system will be in place for inexperienced members to be with members that have been to the airfield before and know the procedures.	4	1	4	4
Launching gliders	Individuals participating in or by-standing a launch risk collision with the glider or injury from fast moving cables. Members driving the winch may be injured by fast moving parts.	Students & Staff	All launches are supervised by a qualified instructor. All members are briefed on launch procedures. No one is allowed to stand forward of a launching glider. Only winch drivers, tug pilots, winch masters, wing walkers and trainees for each role are permitted in the vicinity. Members who have gone solo are allowed to drive the winch but only under supervision of a supervisor and have had a safety brief, winches also have guarded cabins.	4	2	8	4
Moving gliders/other manual handling	Gliders and other equipment may be heavy or cumbersome, posing risks of lifting and crushing injuries to individuals.	Students & Staff	Movement of gliders and major manual handling is supervised by qualified instructors and not attempted by too few individuals.	4	2	8	4

Propellers and rotors	Propellers and rotors of powered aircraft may start if agitated causing serious injury to anyone in the near vicinity.	Students & Staff	Members are briefed on the dangers of propellers and rotors. Members may not touch propellers or stand within propeller arcs. Propellers & rotors must be treated as live and never approach the aircraft from the front. Regular safety checks are made in accordance with the aircrafts maintenance schedule with the Civil aviation authority.	5	2	10	5
Weather	Members flying in conditions exceeding the specified minimal risk collisions and structural damage to the aircraft.	Students & Staff	VFR (Visual Flight Rules set by the Air Navigation Order) and additional restrictions regarding wind (set by gliding club) are strictly adhered to. Qualified instructors confirm conditions are safe before each flight commences.	5	2	10	5
Obstacles Ground and airborne	Collision with any obstacles during flight would cause serious injury to the pilot, people in the vicinity and damage to equipment.	Students & Staff	Flying is not conducted within 500ft above any obstacles outlined on aviation charts (Rule 5 ANO).	5	2	10	5
Slips, trips, falls	Individuals could slip, trip or fall on site due to uneven ground, protruding equipment or getting in/out of vehicles.	Students & Staff	First aider on site will treat minor personal injuries. Incidents will be reported to the safety officer. Care must be taken around all areas of the airfield due to unfamiliar, uneven surroundings.	5	1	5	5
Collisions: mid-air	Mid-air collisions are very rare, however if one was to happen the pilot may need to bail out and use their parachute.	Students & Staff	Rule 8 (collision avoidance in the air) from the Air Navigation Order are strictly followed and pilots must keep a good look out for other aircraft. Pilots are briefed on what to do if such an event were to happen.	5	2	10	5

Taking off/Landings	Members in the taking off/landing area risk injury from taking off/landing gliders and may cause distraction to the pilot.	Students & Staff	Only members required to remove the gliders/equipment will be permitted in the taking off/landing area. For whiplash see injuries. All students will be strapped in by a harness that holds the student securely in place and therefore won't be moved about in turbulence, if the glider was to flip over, again the harness will hold the student in place and through a wheel failure also.	5	2	10	5
Solo flying	Solo gliding could cause injury to the pilot and people nearby if they are not properly trained.	Students & Staff	Members will not be sent solo until the instructors are confident that the student will perform the lone flight in a safe and competent manner. Bronze badge level holders are at a competent level to fly solo Via the British Gliding Association achievement scheme, however a few solos must be flown during training as part of the training.	5	2	10	5
Equipment (failure/breakages/ misuse/storage/los s) and what to do in the event of this.	Equipment that has failed, is broken, misused, or stored improperly could cause injury to the user or passers-by.	Students & Staff	Any equipment that is lost or is unsuitable to perform its job must be reported to a supervisor immediately for appropriate action to be taken. If an injury does happen inform a first aider immediately and report to the safety office and union.	3	3	9	6
Deployment of parachutes	In the event of an emergency during flight the student may need to bail out of the glider. Correct parachute deployment is vital.	Students & Staff	Student pilots will be briefed on how to correctly deploy the parachute in the event of an emergency.	5	2	10	5
Pre-flight checks	Failure to perform pre-flight checks before each flight may lead to problems during the flight.	Students & Staff	Students are briefed on how to perform pre-flight checks correctly and in a safe manner.	5	2	10	5
Fire	Injury to persons in the area and damage to equipment.	Students & Staff	Students are brief on fire drills and fire assembly points and how to evacuate from glider and site	5	2	10	5

Incident Reporting	Incidents not immediately reported to an instructor may lead to an unsafe situation and cause incidents.	Students & Staff	Incident reporting at the gliding club will be through as of the gliding club's procedures.	3	2	6	3
First Aid	Without appropriate first aid arrangements minor injuries could become serious.	Students & Staff	Qualified first aiders are on site if required.	3	2	6	3
Pre-existing medical Conditions	Certain medical conditions may be exasperated by flying or cause the student to be unsafe to fly.	Students & Staff	Students must declare any medical condition that may endanger a flight before they are permitted to fly. In some cases a note from their GP may be necessary to confirm they are safe to fly. If a supervisor of certain members takes ill, those members will be given another supervisor until original supervisor is well.	5	2	10	5
Inexperienced Members	Inexperienced members need to be taught how to correctly perform jobs otherwise it may lead to unsafe usage of equipment.	Students & Staff	Inexperienced members are accompanied by a supervisor (The term supervisor includes instructors of all levels, tug pilots and club members who have been trained or have experience as required) and taught different tasks to become more experienced. An experienced member is classified as someone who can perform a task in a safe and competent manner without needing supervision and who has been signed off to use that piece of equipment.	2	4	8	8
Student behaviour	Students behaving in an unsafe manner could cause injury to themselves or others and damage equipment.	Students & Staff	Students behaving in an unsafe manner are corrected. If the behaviour continues they are not permitted back on the airfield.	5	2	10	5
Glider Towing	An incorrectly towed glider could lead to a serious accident and injuries.	Students & Staff	Towing of gliders is only performed by gliding instructors with Private Pilot Licences.	5	2	10	5
Smoking	Everyone	Students & Staff	Following smoking policy	2	2	4	2

Winch cable	Winch cables will drift and could break, cables are heavy and come back down to earth this could cause serious injury to members trying to catch the cable and who fail to stay outside of cable drop zone. Gliders that have failed to launch may cause injury as winch maybe still running.	Students & Staff	Winch cables are heavy and must never be attempted to be caught once the glider has been released, when a cable is drifting stay well clear of the taking off/ landing area, the cable collector will not collect the cable until it's come down and winch has been disarmed this also applies if the cable breaks.	5	2	10	5
Medical Conditions: fatigue, under influence, dehydration, UV, Heat exhaustion	These medical conditions if not spotted early on, could cause injury to the individual and/or others around them if the individual operates equipment.	Students & Staff	If any of these medical conditions happen the individual won't operate any equipment until they are deemed fit by a First aider, if individuals are under the influence then they will not be allowed to attend the enrichment.	5	2	10	5
Injuries: getting in and out of glider, trapped limbs, whiplash, concussion	Getting in and out of a gliding could cause injury if not preformed properly, limbs could get trapped during canopy operation, whiplash could happen in a heavy landing or during a take-off and the possibility concussion during these stages of flight.	Students & Staff	Members will be taught how to get in and out of gliders properly and how to open and close the canopy properly to avoid entrapment. If whiplash and/or concussion were to happen get a first aider and report it on site	4	2	8	4
Crash Landings/ Landing out away from the airfield.	A glider may need to land out away from the airfield due to natural lift (thermals and updrafts) not being available anymore, landing out may cause injury on rough surfaces and Obstacles.	Students & Staff	Students during training will be taught how to land out away from the airfield safely and what the procedures for after landing out are. If done properly landing out is very safe, if an accident were to happen with injures contact local emergence services.	5	2	10	5

Action Plan

Hazard	Additional control measures required to reduce the risk	Action assigned	Date complete	Signature

Name of assessor Steve Dingsdale	Signature	Date 6th November 2014
Head of Department	Signature	Date
TU representative	Signature	Date

Staff Name	Staff Signature. (I have read the risk assessment and am fully aware of all aspects)	Date complete

Risk Calculator Matrix

Consequence ➔ Likelihood 🡻	**1 Negligible**	**2 Slight**	**3 Moderate**	**4 High**	**5 Very High**
5 Almost Certain	5	10	15	20	25
4 Very Likely	4	8	12	16	20
3 Likely	3	6	9	12	15
2 Unlikely	2	4	6	8	10
1 Improbable	1	2	3	4	5

1 – 4	**Low Risk**	Review on change of process or if circumstances change. No great effort required to reduce risk further.
5 – 8	**Low – Moderate Risk**	Investigate engineering controls to minimise reliance on PPE & procedures. Provide additional training, supervision & monitoring of agreed controls until accepted as routine.
8 – 12	**Moderate – High Risk**	Critically examine the areas of exposure in the process, and agree a timetable for completion of all agreed actions. Review on implementation, and closely monitor effectiveness of new controls.
NB – There is a threshold risk level of 15, at or above which *immediate* action must be taken		
12 –25	**Unacceptable Risk**	Cease work until effective interim controls are agreed and implemented, and an action plan to permanently reduce the risk to an acceptable level has been agreed with the Executive Group. This condition is mandatory.

Appendix 4

Mentoring Junior Pilots, BGA Guidelines

Aim:

- to support the enjoyment, retention and achievement of junior pilots (JP) within BGA clubs using club approved mentors.

Objectives:

- To provide a beneficial, purposeful partnership
- To provide relevant advice and support regarding gliding
- To encourage JP to progress and advance their flying skills
- To track and monitor progress of JP

What is a mentor?

- An experienced glider pilot
- Familiar with the structure and organisation of the gliding club
- Gives support for personal development and learning

Mentors need to be:

- Organised, patient and understanding
- Knowledgeable about gliding (probably an instructor but this is not mandatory)
- Able to network (if relevant) to encourage JP into aviation-related careers
- Enthusiastic, persuasive and encouraging
- Reliable
- Willing to spend time on the initiative
- Clear about aims and objectives
- DBS checked

Mentoring may be:

- One-to-one (one instructor: one JP)
- Group (groups of instructors: Several JPs)
- One-to-many (one instructor: Several JPs)

Delivery Methods may be:

- Face to face
- Telephone
- Internet based

Qualities of a good mentor:

- Easy to approach
- Ability to actively question JP
- Able to give constructive and positive feedback
- Be able to support JP in identifying and setting targets
- Possess skills to guide JP whilst letting them make decisions
- Demonstrate an interest in the progress of the JP
- Be able to encourage and challenge JP

Skilled mentors will be able to gain the correct balance between support and guidance and control.

Identifying suitable JPs for mentoring. They need to:

- Be eager to learn from mentor's experience
- Prepared to ask and receive feedback
- Seek to improve personal development

Qualities required of JP

- Willing to take responsibility
- Seeks new challenges
- Commits to the mentoring programme
- Able to accept constructive feedback
- Enjoys gliding
- Eager to gain new skills

Some potential problems of a mentoring programme:

- Insufficient time spent on the partnership
- Lack of clarity regarding aims and objectives
- Lack of skills of mentor
- Unreasonable expectations between mentor and JP
- JP not willing to properly engage with the programme

To overcome problems:

- Set realistic goals
- Maximise time by using different strategies for communication
- Remember that the JP and gliding are the focuses of the partnership
- Be honest
- Briefing to be provided for the Mentor and JP

Possible activities:

- Discuss the programme
- Agree aims and objectives
- Observe each other flying
- Agree targets and how to achieve them
- Provide feedback and support
- Track and monitor training card
- Introduce JP to other JPs
- Support with some theoretical input

Possible benefits:

- An increase of number of JPs that join and remain
- Finding new talent
- Find fresh motivated club members
- Ensure the continued success of the club
- Enhance the learning environment
- Obtain stronger commitment from club members

Confidentiality:

- All shared information and discussions are between the mentor and the JP and should not be shared with other people without permission. The only exception to this is if you believe the JP may come to harm if you do not disclose.

Appendix 5

STEM Work Booklet

STEM Activity Day 2014

Tasks

1. The launch. Calculating acceleration, drawing appropriate velocity/ time graphs, calculating kinetic energy and deducing force acting on the glider.

2. The winch. Calculating the energy transferred by the winch to the glider and explain how it is altered depending on the type of glider being launched.

3. Explain why all gliders at Cotswold Gliding Club contain ‘energy absorbing cushions’.

4. Build a paper plane from a single sheet of A4 – throw it the furthest and win the prize!

5. Explain how the materials used in manufacturing gliders have changed in recent years and give reasons why these new materials are used.

6. Work out your way home!

The Launch

Task1. Calculate the acceleration of the glider to take off.

Write down what you need to know in order to calculate this.

The initial acceleration of the glider is _____

State any assumptions you have made.

Task 2. Draw a velocity diagram of the launch. After you have flown you may wish to change this according to how the acceleration 'felt' for you. Label your diagram clearly.

Task 3. Calculate the kinetic energy of the glider after take-off.

Task4. Calculate the change in momentum of the glider from rest to take off.

Task 5. Calculate the resultant force acting on the glider for this to happen.

The Winch

Task 1. Calculate the total energy transferred by the winch to the glider. Think about what types of energy have been transferred.

Write down what information you need to know to calculate the size of these energies.

KE transferred _____

GPE transferred _____

Safety cushions.

The gliders are fitted with energy absorbing cushions. Explain below how these cushions can prevent injury in the event of a ‘heavy’ landing. (6)

NB – 4 marks are for the ‘sciencey’ bits – 2 marks for quality of SPAG. Now, self assess your answer – justify your score to your peers and then improve where possible

Materials used in gliders

You will be shown different gliders at the launch point and in the hangers. Describe briefly how new materials have changed and explain why they have improved the performance of modern gliders.

Which way and how far to home?

Assume..

You fly 40km at a bearing of 70°, then due South for 80km. You then fly 120km at a bearing of 310°. What should be your bearing to fly back to your starting point and, if you flew at a steady speed of 80km/hr, how long would it take you?

Hints.

1. Draw a sketch.
2. Decide which method – trig or scale drawing.
3. Don't give up!!

Data Sheet

1 knot = 0.514m/s

1 foot = 0.305m

1lb(pound) = 0.454kg

Empty mass of PW 6 glider = 360kg

Empty mass of K13 glider = 290kg

Your mass with a parachute =

Instructors mass with a parachute is always 90kg – no matter how big they are!!

$F = m \times a$

Momentum (p) = $m \times v$

$F \times t = \Delta p$

$KE = 1/2 \times m \times v^2$

$GPE = m \times g \times h$

Power = $E/t = f \times v$

Notes Page

Appendix 6

Some Examples of Good Practice to Support Junior Gliding

Junior Gliding Centre Status

Reduced rates for juniors and cadets (e.g. membership, launch and soaring fees)

Club Trusts set up to support junior gliding

Auction of promises to raise money

Designated personnel to run youth programme

Instructors keen to work with young people (DBS checked)

Designated flying spots for youth gliding

Expeditions to promote bonding and increase experience

Effective tracking and monitoring of progress

Intense solo to bronze courses

Maintain motivation by continuous training

Positive support from CFIs and club leadership

Dedicated junior website

Links with schools, colleges and universities

Links with STEM

Fixed price to solo

Appendix 7

Example Partnership Agreement

Portsmouth Naval Gliding Club & Fareham College

Partnership Agreement

1 All students will volunteer for the gliding activity.
2 All students will complete and sign a PNGC membership form. If U18 parent/carer must also sign.
3 All students will receive an airfield safety briefing.
4 All students will be briefed on PNGC junior rules and a code of conduct agreed.
5 All students will wear a PNGC approved parachute when gliding and be briefed in its use (emergency use only)
6 All students will be weighed prior to gliding to ensure cockpit safety limits are adhered to.
7 Fareham College will be responsible for pastoral care of their students.
8 All students will glide with a BGA qualified instructor (1:1)
9 Students will not fly in PNGC tugs.
10 Maximum number of Fareham students at the launch point at any one time will not exceed 15.
11 There will be a named point of contact for each organisation (These names may change by mutual agreement)
12 Some students will glide as part of their enrichment activities.
13 Some students may glide to support and/or enhance their academic studies.
14 Payments for membership and gliding costs will be made via PNGC invoice to Fareham College.
15 Prices for membership and gliding fees have been agreed but may change by mutual agreement.
16 There will be PNGC personnel at the launch point at all times whilst gliding is active.
17 The duty instructor will have the final decision to confirm weather conditions are suitable for flying.
18 Any student behaving in an inappropriate manner may be asked to leave the airfield.