

Kites

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Abstract

Constructing and flying kites is an ancient art, and develops skills in — *inter alia* — teamwork, project deployment, geometry, and aerodynamics.

1 Introduction

The tethered wind-powered flying devices known as ‘kites’ are of ancient Asian origin, and nowadays popular as a sport worldwide ([American Kitefliers Association, website](#)). Curiously, they are given names of birds, insects, or imaginary creatures associated with power, grace, and beauty — for instance, *kite* [En] (Milvus spp.), αετός [Gk], eagle (Aquila spp.), *papagaio* [Pt], parrot (Psittacus spp.), *drake* [En], male duck (Anas spp.) or mayfly (order Ephemeroptera), and *Drachen* [De], dragon.

Whether traditional or innovative, kite design is limited pretty much by imagination and materials (in technology and/ or supply), while making them fly requires skill and suitable wind. A simple design such as regular geometric figure, constructed with low-tech materials, can make for a pleasant activity with indoors (§ 3) and outdoors (§ 4) parts — and appropriate precautions, of course.

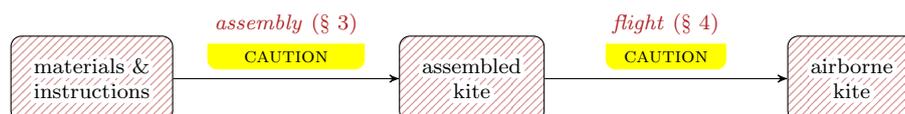


FIGURE 1 Constructing the kite is only half the fun; the other half is flying it

2 Design

Figure 2 represents a kite design that is popular in eastern Mediterranean countries, with a regular hexagonal shape. Materials are presented in Table 1 and the assembly procedure in Figure 3.

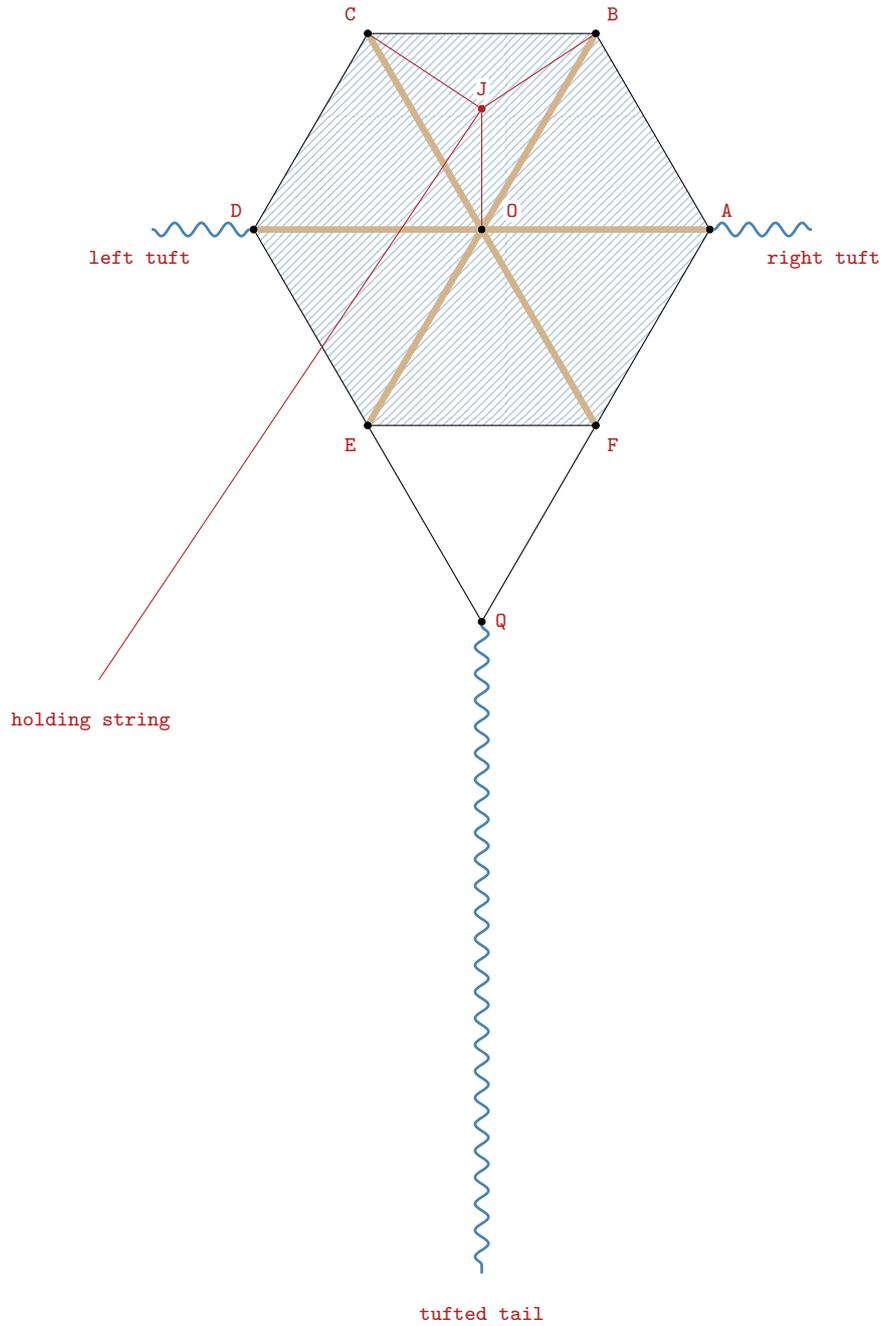


FIGURE 2 An hexagonal kite; segments between letters are of equal length

3 Indoors

The kite team is called upon to work together in a common spirit and build the kite using a variety of materials and tools (Table 1). Decoration materials are optional (e.g. crayons, paint).

MATERIAL ^a	QUALITY	QUANTITY	TOOLS
Wrapping paper	Plain or coloured, 80–120 g/m ²	1m ² , square format	Scissors
Lightweight paper	Newspaper or magazine	ca. 30 sheets A4	Scissors
String	Cotton or linen	ca. 60m, Ø2mm	Scissors
Wood	Balsa or similar	80cm×2cm×0.7cm, three pieces	Drill, saw
Plain nails	Iron, headed	ca. 1.5cm, Ø1mm, six pieces	Hammer
Bent nails ^b	Iron, U-shaped	ca. 1.5cm, Ø1mm, seven pieces	Hammer
Split pin ^c	Aluminium	ca. 3.5cm, Ø2mm, one piece	N/A
Glue	Stick, suitable for paper	1 package (ca. 8g)	N/A

^aWhenever possible, consider re-utilisation
^bAlso known as ‘fence staples’
^cAlso known as a ‘cotter pin’

TABLE 1 Consumables and respective tools for their processing

The assembly tasks (Figure 3) are enough to keep up to three people busy, in two lines of work that can be executed in series or in parallel: the body of the kite and the ‘tailoring’ of the tufts and tail. Caution should be exercised on the use of scissors, hammer, saw, and drill. When minors are involved, competent adult supervision is crucial.

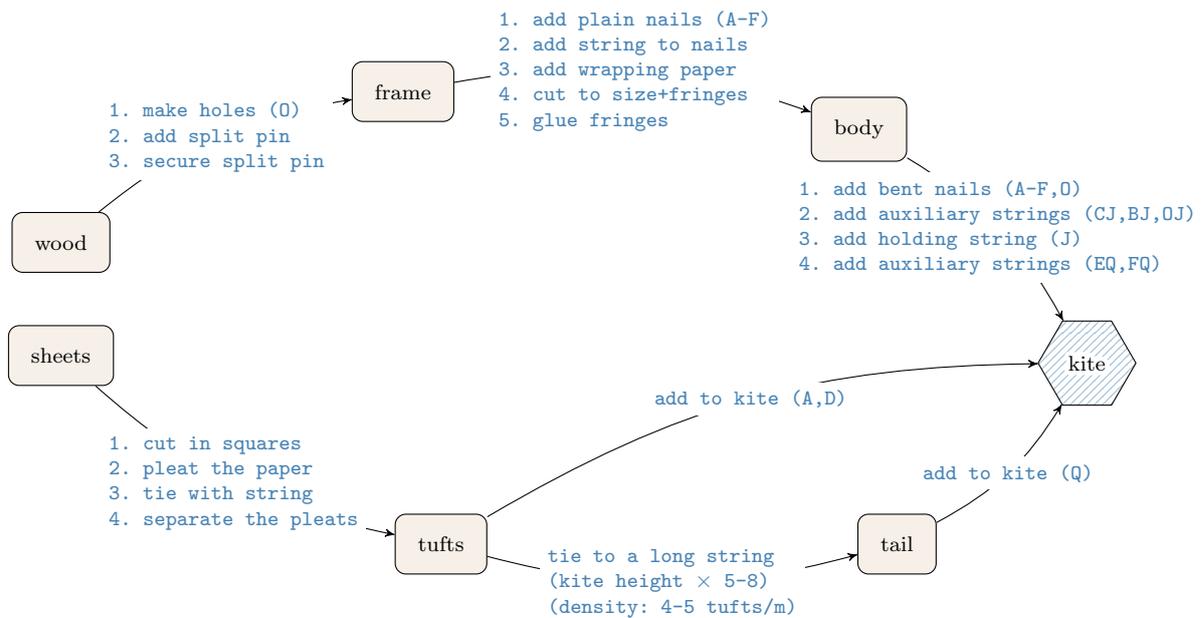


FIGURE 3 The assembly procedure (Perdicoulis, 2014); letters correspond to Figure 2

4 Outdoors

Having secured a well-built kite, the game is taken into a public open field free of power lines, with a relatively regular surface, and a low density of kite flyers to avoid collisions on the ground as well as in the air.

A convenient team configuration for the outdoors includes the ‘flyer’ (or pilot of the kite), the ‘launcher’ (the person who holds the kite at launch time), and an ‘observer’, who can be making useful observations, taking photographs, or video. Team members may take turns in these three posts, to share experiences.

Once the kite is airborne, the flyer starts to ‘feel’ the aerodynamic properties of the kite — for instance, how it feels when the wind produces lift, how the tail stabilises the kite (or not), and what modifications may produce a better flight experience (e.g. a longer or denser tail).

5 Competition

Competitions usually convert everything to ‘points’, total sums, and rankings. With kites it does not have to be that way: there are plenty of aspects to be *admired*, and teams learn to compete for *value*, *merit*, or other qualitative facets of reality — for instance, kites may. . .

BE INTERESTING — e.g. in shape, colours, materials, history, or construction

FLY WELL — e.g. take off easily, or have a stable flight

BE BEAUTIFUL — e.g. aesthetically pleasing, whether standing or in flight

BE THE PRODUCT OF GOOD TEAMWORK — e.g. attitude, solidarity, and skills

Besides the fun of participation, competitions often teach valuable lessons that can feed back into improvements — for instance, regarding the kite (e.g. colours, tufts, materials, design), the teamwork (e.g. project deployment, attitudes, interactions), and flight skills (e.g. elegance, stability).

6 Continuing

A kite may last for many flights, with minor maintenance (e.g. treating small punctures in the paper), larger repairs (e.g. in the frame, after a serious crash), and improvements in the design. As it happens with other sports, it builds team spirit and skills, is good fun for the team, and provides a good spectacle for the others.

References

American Kitefliers Association (website) <http://kite.org>

Perdicoulis, A. (2014) *Language*. Perdicoulis Publishing: Folio Division, Technical Collection.

