



```
#
#Description: Ask the user to enter the number of ba
# wish to have in their game. If they d
# number, the program loops, until a num
# entered. Convert the number to an inte
# finally return it.
#
#####
def get_number_of_treasure_chests():
    while True:
        print("Please enter the number of treasure ches
        treasure = input()
        if treasure.isnumeric():
            treasure = int(treasure)
            break
    return treasure

#####
def get_board_size():
    while True:
        print("Please choose the size of board you wish
        print("A 8 x 8")
        print("B 10 x 10")
        print("C 12 x 12")
        print("Please enter A, B or C")
        size = input()
        if size in ['A', 'B', 'C']:
            return size
        else:
            print("Invalid option. Please enter A, B or C.")
            continue
```

Python in Education

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My Role(s)

- Regional Coordinator and Master Teacher for the CAS Regional Centre at University of Manchester
- Regional Coordinator and Master Teacher for the CAS Regional Centre at Lancaster University
- Liaison Tutor for Maths and Computing Trainee Teachers at Knutsford Academy (attached to LJMU)
- Associate Tutor for Computing Trainees on the PGCE in Computer Science/ICT at MMU
- Consultant for the National STEM Centre in York (deliver CPD and create resources)
- eTutor for the BCS Certificate in Teaching Computer Science

My background

- Programmed in the 80s on 48k ZX Spectrum at home and TRS80s at school both in Basic
- Maths Teacher
- Part Time Degree in Computing at Bolton - mainly C++ some VB6
- Played with PyQt and Pygame around the end of my degree (early 2009)
- Created and administered our School website in Django (2009-2013ish)

The Change to Computing - 2012

- NextGen Report by Ian Livingstone
<http://www.nesta.org.uk/publications/next-gen>
- Shut Down or Restart? Report by Steve Furber and others
<https://royalsociety.org/topics-policy/projects/computing-in-schools/report/>
- Speech by Senior Google Official condemning ICT as “not fit for purpose”
- September 2012 - disapplication of ICT as a subject, with new “Computing” subject coming on stream in September 2014

A New Era of Computing in Schools?

- Computing at School - up to 2012 (2000ish members, 20-30 Hubs)
- Launched the Network of Excellence in Teaching Computer Science in 2012 - Added Master Teachers to the mix
- Now have 28341 members, and 248 Hubs. Plus somewhere in the region of 450 Master Teachers. With 10 Regional Centres in England (and CAS in the devolved nations)
- National Curriculum for Computing at Key Stage 3 specifies that students should learn two programming languages at least one of which is text based
- Anecdotally approximately 75-80% of the schools I deal with are using Python as their main text based language
- Key Stage 4 (GCSE) - each of the major exam boards has a GCSE, (new versions are being examined for the first time this summer)

- At GCSE all of the boards now have a practical programming component worth 20% of the final grade known as NEA Tasks (previously called Controlled Assessments)
- These have issues!
- I have some to show you after.
- A Level also has a 20% NEA, but these are personal projects and work much better
- However the skills required to access the highest grades are quite high
- Still no blanket requirement to have studied A Level Computer Science to do a degree in it, is hampering adoption.

What can you do?

- Volunteer with organisations like CodeClub and CoderDojo to work with children
- Become a STEM Ambassador
- Encourage your company to do outreach to schools and similar organisations
- Volunteer with adult coding organisations such as DjangoGirls and Code Up
- Currently trialling sessions with Hive Manchester and developers from Autotrader/Rental Cars for teachers. Potential to utilise some of you to deliver similar sessions
- If you're interested email me at dave.ames@computingatschool.org.uk

Questions?