

What are Fermi-tasks?

- Fermi-tasks are never true or false.
- Fermi-tasks always have an approximately solution.
- Fermi-tasks shall be solved in a group.
- Fermi-tasks shall encourage to discuss among each other.

method to handle Fermi-Aufgaben

Fermi tasks consist of question, which could not be answered without collecting more data. Therefore one should consider, which data is needed to solve the task.

To collect data you have to **estimate, measure, count, calculate, read and research.**

task 1

① Does a tower with 300 books fit in the school library.

hints:

- How can books be stacked?
- What length, width and height do you have to find out?
- How can you determine the height of the school library?
- Do you need measuring devices?
- How wide is a book?

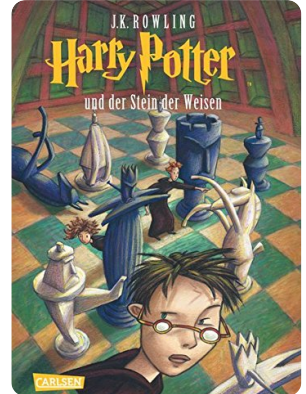


task 2

- ② How often does the letter „e“ appear in the book „Harry Potter and the Philosopher's Stone“?

tasks:

- How often does the letter „e“ appear on one page?
- Does the letter „e“ appear the same number of times on all sides?
- How can you make a projection from one page to all pages?



task 3

③ How many pupils enter the library during the school year?

hints:

- Do pupils also come outside loan times?
- How many days a year is the library open?
How long is it open during the day?
- How many pupils enter the library during
the day?



task 4

- ④ How much do all the books weigh that are borrowed from the school library during the school year?

hints:

- How much does a book weigh? Do you have to investigate how books differ in weight?
- Is it possible to round sensibly?
- How can you determine the mean value for the weight of a book?
- What other sizes do you need to know?
Do you need a measuring device?



task 5

⑤ How many hours have you spent reading so far in your life?

hints:

- Which age did you start reading?
Is the time in which you were read aloud valid?
- In which situations do you have to read?
- How can you make a projection?
- In which unit (day, week, month, ...) can you specify the reading time?
- In which unit can you express the result best?



task 6

⑥ How many books do you need to lay out the edge of a soccer field?

hints:

- How can you find the average length of a book?
- How can you find out the size of a soccer field?
What information do you need?
- Are all soccer fields the same size?
- How are the books put down?



task 7

⑦ How many books do you need to cover the entire floor of the library?

hints:

- How can you determine the floor area of the room in your school library?
- How can you calculate the average size of a book?
- Does it make sense to find out how many books can fit in one m²?



task 8

⑧ Is it possible to lay out the floor of the library with the books of your library?

hints:

- Wie könnt ihr die Bodenfläche des Raumes eurer Schulbibliothek ermitteln?
- Wie könnt ihr die Durchschnittsgröße eines Buches errechnen?
- Ist es sinnvoll zu ermitteln, wie viele Bücher in einem m^2 Platz finden?
- How can you find out how many books are in the library?
- Does it make sense to count the books on one shelf and then extrapolate?

