Subject : Mathematics and Physics

Brussels, December 8th 2020

Dear Parents,

Since 2010 a technical tool, TI-Nspire calculator (the Texas nSpire CAS CX), has been part of the mathematical toolbox of the European schools. The purpose of any technological tool is to help students in problem solving, to do the heavy or laborious mathematical lifting, so that students can focus more on understanding and formulating the problems to be solved. In February 2020, the Joint Teaching Committee of the European Schools has decided, based on the work of a group of experts, to introduce GeoGebra.

Geogebra is a software running on a technological tool that will replace the TI-Nspire calculator in the context of the new Mathematics and Physics syllabi. The above-mentioned decision was approved by the Board of Governors in April 2020. GeoGebra runs on several platforms, from ordinary computers to tablets (and even smart phones, though not accepted during our lessons).

This software has an exam mode which blocks the unintentional use of the tool/device (e.g. accessing internet) during tests. You can find further information about the system on their website: https://www.geogebra.org/.

According to the Memorandum 2020-04-M-7-en as of 6 May 2020, the following technological tools/mobile devices must be used for Mathematics and Physics as of 2020-2021:

> *In accordance with the characteristics required by* ***the mathematics and physics syllabuses*** *for secondary year S****4*** *of the European Schools and by decision of the group of experts, which convened on 23 April 2020,* ***for the beginning of the 2020-2021 school year in September 2020, year S4 students must have a non-graphing and non-programmable scientific calculator.***
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> *In accordance with the characteristics required by* ***the mathematics and physics syllabuses*** *for secondary year S****5*** *of the European Schools and by decision of the group of experts, which convened on 23 April 2020, for the beginning of the* ***2020-2021 school year in September 2020, year S5 students must have their own device allowing GeoGebra 6 software to be used in the classroom, at least in offline mode (see minimum characteristics of the device below). In addition, a non-graphing and non-programmable scientific calculator will be required*** *for the 2020-2021 school year examinations.*
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> *For S6 and S7 the technological tool will not change as compared to the previous years. In accordance with the characteristics required by the mathematics syllabuses for secondary years S6 and S7 of the European Schools, for the beginning of the 2020-2021 school year in September 2020, years S6 and S7 students must have a* ***TI-Nspire CX CAS calculator equipped with version 4.5.2.8 or higher or a TI-Nspire CX II-T CAS calculator, equipped with version 5.1.3.73 or higher.***
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> ***Please note that the first use of GeoGebra in a formal official exam situation will be in the second semester of S6 in the 2021-2022 school year and the first Baccalaureate which will use this application will be the Baccalaureate class of 2022-2023.***

Minimum recommendations for devices running GeoGebra in the classroom / examination room

*GeoGebra **6** can run on various devices (tablet or laptop) online or offline. The group of experts does not specify a model (brands or devices). However, the group recommends at least the following, for adequate use of GeoGebra 6 (these are minimum specifications).*

A more powerful device will not improve the functioning of GeoGebra in any way but will of course allow for more diverse and in-depth uses across the full range of the curriculum.

- *Operating system: any operating system supporting GeoGebra **6***
  (Complete name in EN: GeoGebra Classic 6 https://www.geogebra.org/download)
- *Minimum RAM: 1 GB for a tablet and 4 GB for a laptop*
- *Minimum storage: 16 GB for a tablet and 32 GB for a laptop*
- *Screen size and resolution: 7" can be allowed provided there is a good display resolution (minimum 720 p), but at least 9" for comfortable viewing with minimum 1080 p. resolution.*

  For students with an educational support agreement in place, the relevant special arrangements should be applied.

From January 2021, we will start using this tool during Mathematics and Physics courses. **S5 students must bring their own device which must be in compliance with the requirements above. Please note that mobile phones do not meet the requirements and cannot be used for that project.** Convertible devices (i.e. two-in-one, foldables) should be preferred if you buy a new device for your child. Similarly, a device with digital pen input should also be preferred as it could be used across other lessons on a BYOD manner.

Please also note the following responsibilities of the student/parent(s):

- *It is the responsibility of the student **to download and install** GeoGebra6 to the device that will be used for the lessons and to check that the software works on that particular device;*
- *Make sure that the device's battery is fully charged before the start of the school day; EEB 1 (the school) cannot guarantee the charging of all devices during school time ;*
- *It must be a silent device during lessons.*
- *The device must be used off-line during lessons unless specified by a teacher, on a lesson per lesson basis. When such a lesson is run, it is the responsibility of the student to use the online capabilities of their device in a manner relevant to the lesson, under the supervision of the teacher.*
- *The devices brought to school are under the sole responsibility of their owner. EEB 1 will not take any responsibility for any individual device. The School will not step in with insurance, directly, or indirectly, if a device is out of order, broken or lost during school time.*
- *All pupils must use their devices in line with cyber safety and General Data Protection Regulations.* ***The school will not provide the pupils with the technological tool /mobile device or Helpdesk support.***
- ***It is also worth noting that students already in possession of a device capable of supporting GeoGebra 6 do not need to purchase a new device.***

Best regards,

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