

Samsung School - smart education solution

An interactive and collaborative learning environment for the next-generation classroom



Discover new avenues for students to learn and educators to manage.

Explore new ways to enhance learning and productivity

Schools have an essential role in preparing students to become productive members of society. Educators around the world have the same vision for their schools:

- Provide a superior-quality educational experience
- Nurture a professional, highly skilled teaching staff to help students reach their full potential
- Manage their schools in an efficient and cost-effective manner

As education needs have evolved, educational software, digital books and applications have increased in availability. Also, as technology advances with the proliferation of Internet-connected mobile devices, such as smartphones and tablets, users are finding new methods to share information. As a result, educators are exploring ways to use these tools in the classroom to enhance learning and productivity. Most modern classrooms are expected to be connected to the Internet through Wi-Fi or wireless broadband and are equipped with desktop PCs, notebooks and even tablet PCs. Classrooms are evolving from isolated learning environments into global collaborative learning centers.

Internet access in schools, along with digital content development and learning management systems, has fostered communication between students and teachers.

Digital education solutions for the next-generation classroom

As demand for digital education tools grow, device manufacturers and solution providers are realizing emerging opportunities in the academic field. Governments are beginning to understand the importance of adapting to the changing needs of tech-savvy students. As a result, many governments are implementing aggressive initiatives, such as digitalized public school textbooks. Their primary goal is to make fundamental improvements to education through interactive teaching tools in the classroom and beyond.

Although most educators are aware of these planned changes, many are uncertain about how the classroom teaching environment will change. However, progressive schools are implementing electronic classroom teaching tools and are finding improved results in learning engagement and classroom management.

The Samsung School solution helps boost student retention rates by providing an interactive learning environment where students actively participate in the lesson. Students become more engaged in the subject matter with hands-on experience and collaboration in the classroom and beyond, helping them to retain what they learn.

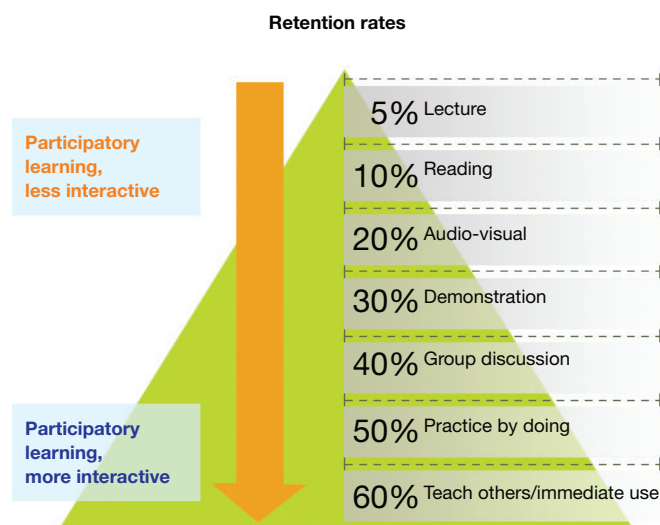


Figure 1. A paradigm shift is occurring in education from teacher-centric to student-centric learning methods.¹

Enhance classroom engagement with advanced digital technology solutions.

Create an interactive and collaborative learning environment with Samsung School

Teachers are finding it increasingly difficult to provide personalized attention to students. This challenge is becoming a serious concern among K-12 educators. As a result, teachers are looking for dynamic new ways to engage students in the learning experience. Educators need to focus on tools that not only motivate students to learn, but also increase collaboration and enthusiasm. Advances in digital technology have opened new avenues of communication, which are being translated into valuable teaching tools.

Samsung School is a total digital education solution that integrates the Samsung GALAXY Note 10.1 tablet with interactive software. This innovative solution helps teachers engage their students and provide classroom management at heightened levels of efficiency. Thus far, no other electronics manufacturer has developed a total learning solution specifically for the education market.

Samsung School includes the following key features:

- **Interactive Teaching.** Supports in-class interaction using functions such as Screen Sharing, Screen Monitoring, Student Device Control and much more.

- **Class Management.** Aids teachers in Course Administration, Content Management, User Management and Communication.

The Samsung School solution incorporates an e-Board and a network environment in each classroom. A central server in the school stores course content and user information. Teachers can use either a tablet or PC, which are mirrored to the e-Board, and can share their screens with students. The wireless screen mirroring is enabled through the Samsung AllShare Cast Dongle accessory. Students can participate in an interactive class using their tablets.

“At Memphis City Schools, our students come first and we strive to provide them with a well-rounded education and all the necessary elements to thrive, both in school and in their future adult lives.”

— Cleon Franklin,
Director of Instructional Technology
Memphis City School District

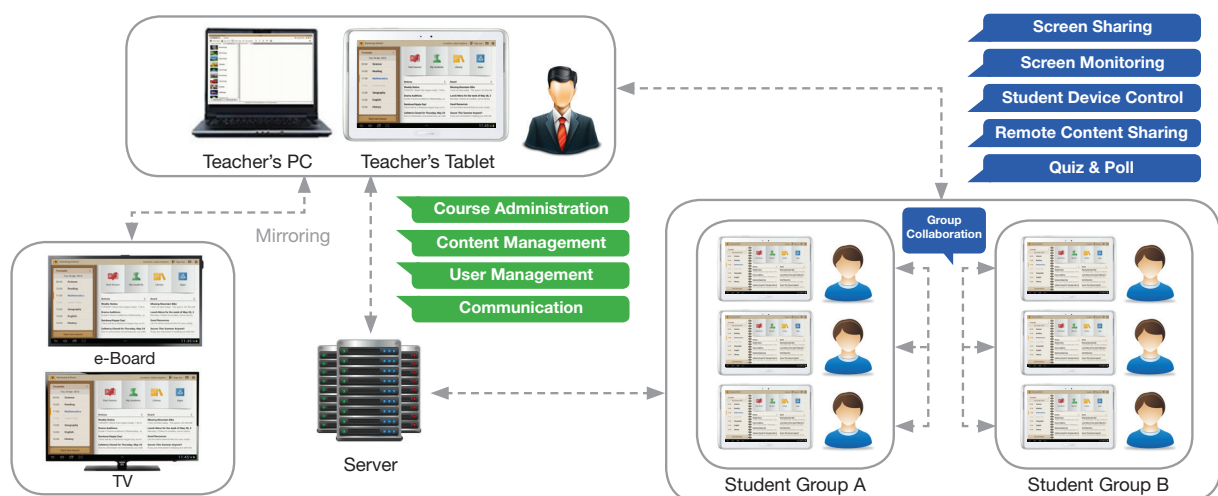


Figure 2. The Samsung School solution helps teachers with student engagement and more efficient classroom management.

Build an interactive classroom by sharing content and monitoring students' screens.

Encourage students to learn with Interactive Teaching

The Samsung School solution provides a dynamic student learning experience with instant interactions between the teacher and fellow students. Using Samsung GALAXY Note 10.1 tablets and Interactive Teaching features, designed to enhance teacher-to-student interaction, students can actively participate in the learning experience. Implementation of this solution can result in better student engagement.

Screen Sharing

Content can be displayed on the students' devices through the Screen Sharing function. While sharing a screen, a teacher can authorize a student to write on the screen, which is shared with classmates. This function encourages student engagement and participation.

In addition to sharing screens, the instructor can distribute files to students during class. The file transfer function enables the class to share files, and enables teachers to share content with students or specific groups.



Figure 3. The Screen Sharing feature enables screen sharing and file transfers between teacher and students.

Screen Monitoring

Students' screens can be viewed in a thumbnail format on the teacher's tablet. From the thumbnails, a student's screen can be selected and displayed in a larger format on the e-Board. The Screen Monitoring feature enables teachers to monitor each student's progress or activity and share it with the class through the e-Board. Teachers can help any student who is not keeping up with the class by remotely controlling the student's device with the Private Coaching function.

The Screen Monitoring function also helps teachers provide individual help more quickly, and encourages student engagement and class participation. By using this presentation tool, a teacher can display a specific student's screen in a large format. The teacher can ask the student to present the material while the student controls his or her own tablet.

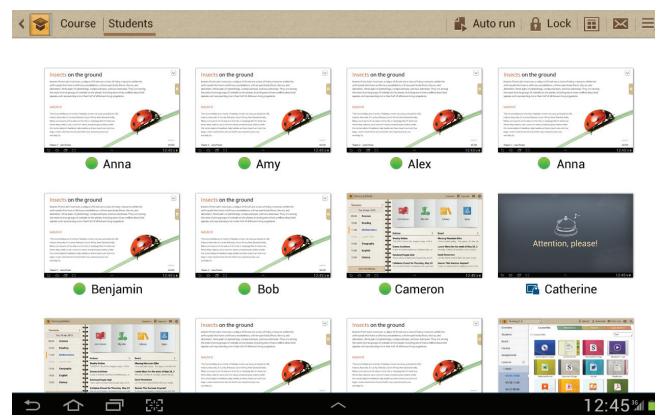


Figure 4. A teacher can see students' screens in thumbnail format on the teacher's tablet and mirror them on the e-Board.

Guide the learning process by controlling devices and sharing content remotely.

Student Device Control

With Student Device Control, teachers gain the ability to control an individual student's device or all devices for an entire class. If a student becomes distracted, the teacher can send that student's device a block message to regain the student's attention. Teachers can further block interactions so that the student can only see the current screen and not manipulate the device.

Teachers can use the app whitelist to manage a list of applications that students can access during the class. Teachers must grant permission for launching specific apps, further discouraging students from activities unrelated to class subjects. If required, all student devices can be powered-off at one time.



Figure 5. The Student Device Control feature enables a teacher to lock a student device with a message to regain his or her attention.

Remote Content Sharing

Remote Content Sharing enables teachers to send website URLs needed for the class directly to the students' tablets or activate learning applications. They can also activate a timer, visible to students on their tablets, to time specific learning activities or exams. This feature is designed to aid teachers in using learning resources and to guide students in class.

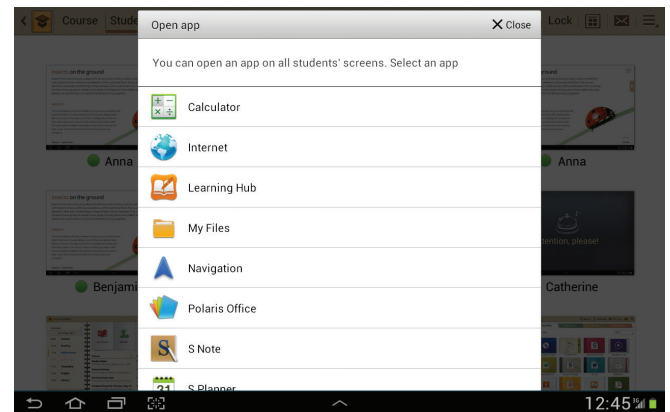


Figure 6. Teachers can open apps or URLs directly on student devices with the Remote Content Sharing feature.

Motivate students with tools that enable them to interact with the teacher and classmates.

Quiz & Poll

Various quiz and poll templates are provided so teachers can easily create quizzes and polls for their classes. The quizzes and polls can be conducted during an interactive class to help the teacher assess student retention and stimulate student interaction and interest.

Teachers can save their quizzes in the Quiz Bank for other teachers to use. Scores can be checked conveniently through the course information section and are displayed using graphs or tables. Educators can track individual student progress and encourage participation by creating customized learning plans based on student comprehension.

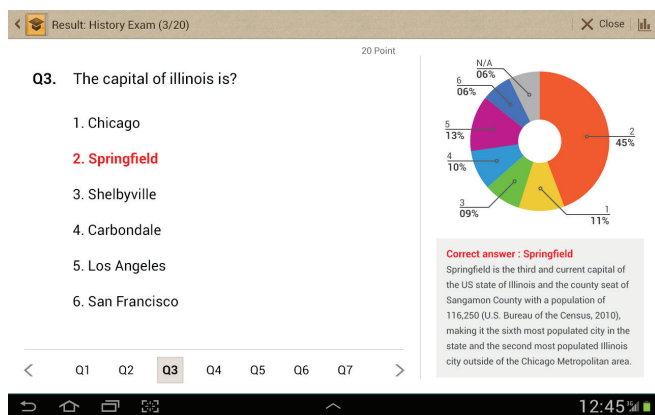


Figure 7. Teachers can administer quizzes or conduct polls and receive results with the Quiz & Poll feature.

Group Collaboration

The Group Collaboration feature helps encourage interactive and group participation among students. Included in the Group Collaboration feature are the Separable Canvas and Collaborative Presentation functions.

Under a group leader's guidance, an image is split into sections on the tablet for group collaboration. The group leader shares one part of the assignment with each member of the group. When the members of the group have completed their individual parts of the assignment, the group leader combines the parts using the Separable Canvas function. The group leader then sends the combined group assignment to the teacher.

The group leader can assign a presenter to navigate the pages or add notes on the screen to share among group members or class. This process uses the Collaborative Presentation function and encourages group activities.

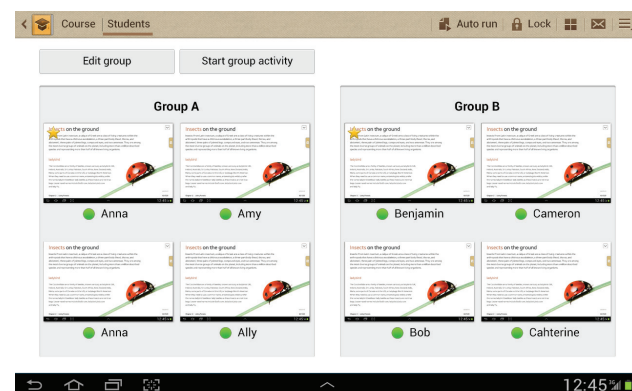


Figure 8. The Group Collaboration function enables students to work together online and helps with group discussions.

View external files and share notes on the tablets and e-Board.

Viewer

Microsoft® PowerPoint®, Microsoft Word, Microsoft Excel® and PDF files can be viewed using the Viewer feature. Images in JPG, PNG, GIF and BMP formats can also be viewed using this feature. Students can automatically access the content prepared by the teacher before the class. Using Viewer, the teacher and students can access hyperlinks and web links directly. Content is automatically fitted to the Viewer screen with the auto-rotation function, which enables the viewing of horizontal content in a vertical format. Teachers and students can access, view and use various types of content with Viewer.

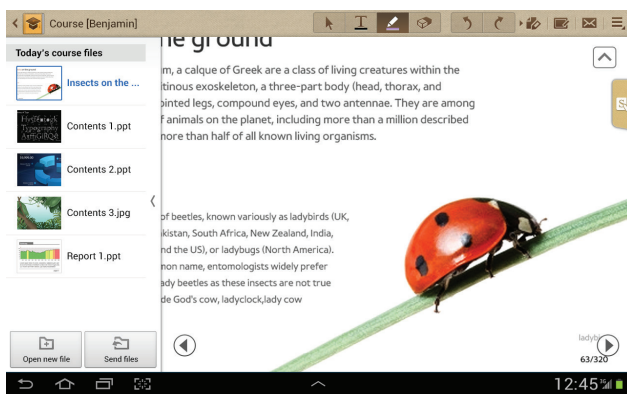


Figure 9. Students can access content previously prepared by the teacher on their tablets with Viewer.

Handwriting Capability

The included S Pen enables teachers and students to take private notes on their devices during class using the S Note function. Samsung's S Pen provides responsive, pressure-sensitive handwriting functionality for a realistic writing experience. The mini S Note button in the right corner of the screen helps capture handwritten notes instantly. Students can make personal notes and save the notes on the local device for reviewing later.

Additionally, teachers can write teaching notes in the whiteboard section of their devices. The notes can be displayed on the e-Board and the teacher can add annotations to the notes. The annotations are mirrored on the e-Board.

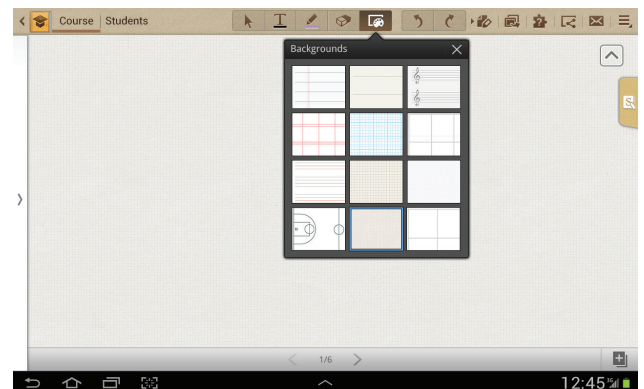


Figure 10. Handwritten notes can be taken using the S Pen with whiteboard or S Note functions.

Manage classes including courses, content, and communications directly from the tablet.

Manage course and user information with Class Management

Classroom management and lesson planning can be daunting tasks for teachers. With Class Management, teachers can handle these functions more easily by performing them electronically using their GALAXY Note 10.1 tablets. The Samsung School solution includes the following valuable features for administrators and teachers to use in the management of school information.

Course Administration

This feature is designed to help schools manage semester scheduling, course and class modifications, and assignment management. Schedule-based courses and temporary courses can support flexible learning environments and situations, including enabling students to instantly participate in a temporary interactive class. The assignment management function can also help manage students' learning activities.

Content Management

Content Management enables teachers to share local files, photos, audio recordings, movies, applications and URLs in Content Library. Content Library includes My Box for teacher-only use and Public Box for sharing with students. Students can access the Public Box and download learning content previously uploaded by the teacher. In addition, teachers can centralize and manage student questions, quizzes and polls with Quiz Bank.

User Management

User Management is a central management function designed to manage teachers' and students' profiles on the server. This feature enables teachers to track student progress, such as attendance and grades.

“I used to hand out pictures or copies of articles, but now students can search for themselves. So I don't need to spend time in front of the copy machine.”

— Gi-Sung Cho, Teacher
Gyeseong Elementary School

Communication

A teacher and student can communicate with the Texting, Course Bulletin Board and School Announcement features. Students can ask questions or send their opinions to the teacher and get answers using the Texting feature. Students also can leave comments and share their opinions on the Course Bulletin Board. In addition, school announcements are shown on the main page so that students can receive information more quickly.

Plan and conduct daily class activities with the Samsung School solution.

Envision a smart learning environment with Samsung School classroom scenarios

Following are examples of how the Samsung School solution can be applied in typical smart school environments.

1. Preparation using Course Administration, Content Management and User Management

At the beginning of the academic year, class administrators can create and set up school terms, subjects, and teacher and student information. After the information is finalized, teachers can plan their class schedules and upload class materials. Students can gain access to the class materials in advance and can prepare for the upcoming class.

2. Starting class using Screen Monitoring, Remote Content Sharing and Viewer

As the class commences, teachers can monitor students' screens in thumbnail format on their tablets to determine if everyone is ready to participate. By monitoring students' screens, teachers can discover which students are not ready for or participating in the class. Teachers can re-engage those students in the learning activity by prompting them for their attention. Also, by sharing URLs, teachers can direct students to video clips related to the class materials, helping to increase student interest. When the class starts, students can access the content prepared by the teacher.

3. Class in progress using Screen Sharing, Handwriting Capability, Remote Content Sharing, Communication and Student Device Control

With Screen Sharing, instructors can share their own tablet screens and notes with students. A teacher can give a student permission to write on the screen that is being shared with the class. During class, students can take notes using the S Pen and S Note features. The teacher can launch educational applications on the students' devices to help lead the class.

When a teacher assigns a group collaboration project to the class, students can produce their finished work with the Separable Canvas and Collaborative Presentation functions. If students have questions or opinions, they can send them back to the teacher's device through the Texting function. The teacher can answer the questions or share opinions with students using Texting, as well.

To ensure that all students pay attention in class, the teacher can use the Student Device Control feature to block non-class-related applications. A screen with a specific message can be presented to students.

4. Evaluation using Quiz & Poll

Various quiz templates enable an educator to create a quiz to monitor and evaluate students' degree of understanding and performance. Teachers can also give an instant poll during class. Because teachers can instantly check response rates, they can determine if students need individual attention.

5. Wrapping up using Content Management and Communication

After class, students can check the Content Library and download materials related to the class. This access enables students to review what they learned in the class and prepare for the next class. Students can discuss the subject matter with fellow students and share their thoughts using the Course Bulletin Board feature, which is available for each subject.

Initial testing in actual classrooms showed that Samsung School increased school competitiveness and improved student concentration by 23 percent. Teacher productivity was improved by approximately 10 percent.

Foster a more positive and personalized learning environment.

Transform the education experience with the Samsung School solution

Educational institutions are always seeking new ways to enhance the learning experience. Providing critical personalized attention to students, the management of class activities, students' progress, and lesson plans are daunting tasks for teachers. These tasks drive an increasing demand for digital technology within the education market.

As the technology industry continues to evolve, it brings new opportunities for schools and teachers to find innovative tools to enhance student education. Today's tech-savvy K-12 pupils have grown up with electronic devices. As a result, they are more responsive to technology and better engaged in the learning experience when these tools are part of their classroom environment.

Samsung is a major electronics manufacturer that has developed a total learning solution tailored specifically to the education environment. The Samsung School solution provides rich interactive teaching features designed to encourage students to become active participants in the classroom. Studies have shown that this type of interactive teaching method greatly improves student retention.¹

Interactive features include Class Management, which contains robust functions to help teachers connect with each other. They can use these functions to more efficiently share lesson plans and quizzes. Students and teachers can collaborate and communicate with the Public Box and Texting functions. Each task is handled directly through the teacher's tablet or PC.

With extensive expertise in developing e-Boards, tablets and related software, Samsung has successfully implemented its school solution in more than 50 schools in South Korea.

This technology helps keep students engaged, helps foster a positive learning experience and helps teachers provide personalized attention and improved classroom management. Educators can no longer ignore the potential benefits of electronic learning tools in the classroom environment.

Features and benefits

Features	Benefits
Screen Sharing	Teachers and students can share content with each other, providing dynamic interaction among all participants in the class.
Screen Monitoring	Educators can remotely monitor students' progress and activities, and students' screens can be shared on an e-Board for student presentations.
Student Device Control	To help ensure proper and secure use of student tablets, teachers can remotely lock students' applications, screens and input functionality.
Remote Content Sharing	Educators can activate and open useful URLs and applications on students' tablets.
Quiz & Poll	Teachers can administer quizzes, conduct polls and quickly assess how well the class comprehends materials.
Group Collaboration	Content can be split on multiple screens to share and compare side-by-side. Students can have a group discussion by sharing screens and assigning a group presenter.
Viewer	Classes can view Microsoft PowerPoint, Microsoft Word, Microsoft Excel, PDF and JPG files without making format modifications.
Handwriting Capability	Teachers and students can take private notes on their devices using the included S Pen and S Note function. Notes can be displayed on the e-Board.
Course Administration	Managing information such as terms, timetables and content related to subjects can be customized for each school.
Content Management	Educators can upload various class and learning materials. Students can download the materials they need on their devices.
User Management	This central management function is designed to manage teachers' and students' information on the server.
Communication	Teachers and students can communicate digitally with the Texting, Course Bulletin Board and School Announcement features.

Solution system requirements

Items	Requirements	
Server hardware	(Based on 100 student users) CPU: Quad-core processor 2.0 GHz RAM: 8 G AboveHDD: 1 TB (7,200 RPM) OS: Microsoft Windows Server® 2008 R2 Browser: Windows® Internet Explorer® 8, Internet Explorer 9 Note: When multiple users download files at the same time, the network environment may be affected.	
Server software	Java™: 1.6 WAS: Apache Tomcat™ 6 DB: PostgreSQL® 9.1	
Client	Tablet	GALAXY Note 10.1
	PC	CPU: Intel® Pentium® Processor 1.8 GHz (Intel Core™ 2 Duo 2.0 GHz or higher recommended) RAM: 1 GB HDD: 500 MB OS: Windows XP SP3, Windows Vista®, Windows 7 Resolution: 1,024 x 768 (600), 32 bit Prerequisites: Microsoft.NET Framework v3.5 SP1, Microsoft DirectX® v9.0 or higher
Wireless network	AP; Enterprise-level, 802.11n, 5 GHz, Channel Bonding (20 users per access point) Note: Network quality may be affected by environmental conditions such as classroom space, arrangement and network device models. Therefore, professional support for network setup is recommended.	
TVs and e-Boards	Note: GALAXY Note 10.1 features wireless screen sharing for TVs by way of AllShare Cast (High-Definition Multimedia Interface® (HDMI®)) supported.* Samsung School PC client enables e-Board input from electronic boards (HID interface supported). *Available on HDMI supported devices only.	

Device specifications

Items	Samsung GALAXY Note 10.1 specifications
Display	25.64 cm (10.1 in.) Wide Extended Graphics Array (WXGA)
Processor	1.4 GHz quad-core
Memory	2 GB RAM
Storage	16, 32, 64 GB + MicroSD
Front camera	1.9 MP FF (720 p HD recording)
Rear camera	5 MP AF with LED Flash (720 p HD recording)
Dimensions	262 mm x 180 mm x 8.9 mm (10.32 in. x 7.1 in. x 0.35 in.)
Weight	600 g (1.32 lb)
Battery	7,000 mAh
OS version	Android™ 4.0 Ice Cream Sandwich and Jelly Bean (JB)
Additional features	TouchWiz, Hubs, AllShare Cast, Wi-Fi channel bonding, Dropbox
Digital pen writing	S Pen embedded, Pen UX (S Note, S Planner) Adobe® Photoshop® Touch

Legal and additional information

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For more information

For more information about the Samsung School solution, visit www.samsung.com/SamsungSchool



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1. IDC Government Insights, "The Next-Generation Classroom: Smart, Interactive and Connected Learning Environments." Document #AP779305V, a white paper sponsored by Samsung, October 2012.

Samsung Electronics Co., Ltd.
416, Maetan 3-dong,
Yeongtong-gu
Suwon-si, Gyeonggi-do 443-772,
Korea

www.samsung.com

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